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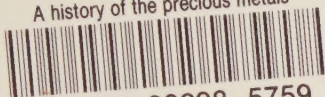
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A history of the precious metals



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A HISTORY OF THE PRECIOUS METALS.



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A
HISTORY OF THE PRECIOUS
METALS

FROM THE EARLIEST TIMES TO THE
PRESENT.

BY ALEXANDER DEL MAR, M.E.

*Formerly Director of the Bureau of Statistics of the United States ; Member of the
United States Monetary Commission of 1876, &c. &c.*

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PREFACE.

THE fact that half a century has elapsed since the preparation of Mr. William Jacob's "History of the Precious Metals," and that, although the interval has been replete with important events relating to the subject—such as the discovery of the great Californian and Australian placers, the opening of highly-productive mines in Nevada, the extension of the European system of money to Japan and other countries—no book has been published which attempts to cover the same ground, will be regarded, it is hoped, as a sufficient apology for the present essay.

Nevertheless, there are other reasons to urge in behalf of its appearance. Mr. Jacob's work, our single comprehensive source of information on the subject, is not only antiquated, but defective. It fails to mark the significant agency of conquest and slavery in the production of gold and silver; it is vitiated throughout by unsafe calculations of the world's stock of these metals in ancient and mediæval times; it affords no information of the very considerable movement from Japan to Europe during the sixteenth and seventeenth centuries; it scarcely mentions, and thus underrates, the importance of the Brazilian placers which have yielded to the world nearly two hundred million pounds sterling of gold; it contains no connected history, indeed but little mention, of the ratio of value between gold and silver; and it omits all reference to the devastation of the earth, and the social mischiefs entailed upon mining countries by the search for these metals.

In spite of these defects, the industry and care which Mr. Jacob devoted to the examination of the more ancient historical data relating to the precious metals have not only brought the present writer greatly into his debt; they must

always command the respect and gratitude of the student in economical literature.

As Mr. Jacob's historical "Inquiry" arose from his connection with the British Bullion Committee of 1810, so the preparation of the present work is due in some measure to my own connection with the United States Monetary Commission of 1876. As a member of this body it fell to my part to prepare certain reports and minutes, to take evidence, examine the California and Nevada mines, and collate returns from American Ministers in foreign countries and from others, relative to the production of the precious metals. In the course of this business many observations had intruded themselves, which, however valuable, could not be suitably embodied in my official reports without exceeding the practical limits assigned to the researches of the Commission. Among these observations were the following:—

1. That the production of the precious metals upon a commercial basis only began with the era of Free Mining, in 1849.

2. That the purchasing power of the precious metals is greatly affected by the existence of the Stock, which has accumulated from past times, and which, howsoever obtained by its original owners, was acquired by its present ones through conquest or slavery, and hence cost them, pecuniarily, little or nothing.

3. That even with Free Mining—and apart from the influence of the Stock—the cost of producing gold or silver from the mines is not, as is generally supposed, limited by their commercial value or purchasing power; but that the fascinating hazards of mining, and the hope cherished by each miner for himself of becoming exceptionally fortunate, sustain the pursuit far beyond the limits of prudence; that in the long run and in all countries it has been unprofitable, and that gold and silver, whenever obtained by free labour, have always cost more than they were worth.

4. That gold and silver mining, particularly the former, injure the surface of a country, by the great demands which

they make upon its supplies of timber, by diverting its mountain streams into mischievous courses, by strewing its arable lands with stones and gravel, and by filling its rivers and choking its harbours with sediment.

5. That in consequence of the physical devastation thus wrought upon mining countries, they have invariably fallen into political decay.

6. That in addition to the pecuniary, there is a moral cost of the precious metals represented by the overpowering incentives towards dishonest management which exist in correlative mining, and by the prevalence of gambling, licentiousness, suicide, and crime in mining communities.

7. That the relinquishment of conquest and slavery as means for the acquisition of the precious metals will tend in future, and apart from other considerations, to continually enhance their purchasing power.

8. And that the probable exhaustion of all the great gold placers of the world, and the number and possible prolific yield of its silver mines, will, through the operation of Quantity, and apart from other considerations, tend to widen the ratio of value between these metals, and thus to render gold always dearer and silver cheaper.

These observations appeared to me so important that, so soon as my affairs permitted, I set out for California, where I have since resided, to verify and extend them. The evidence obtained induced me to combine with it a general history of the precious metals, begun some years before, so that the entire work might form a more or less complete collection of essential information on the subject.

So much for the origin and design of the work. With regard to the execution, the author had two purposes in view, which it is hoped will be indulgently considered by his critics. In the first place he deemed it of advantage to write the book in a mining country within sight of the mines, and in the midst of a mining community. This obliged him to cut loose from technical books, for there are few or none in the libraries of the Pacific Coast, and to

trust for historical reference to works of a more general and therefore hardly so accurate a character. In all essential matters, however, he has taken great pains to procure reliable information. In the second place, as he expected that the book would find its way, among others, into communities similar to the one amid which he had composed it, and perhaps equally poor in works of reference, he went to greater length in setting forth certain events and dates than to the reader in literary countries may appear to have been necessary. The same consideration has also had some weight in the choice of style.

SAN FRANCISCO, CALIFORNIA,

June 1st, 1879.

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HISTORY OF THE PRECIOUS METALS.

CHAPTER I.

THE ARGONAUTS OF ANTIQUITY.

Relations of this history to science and literature—The precious metals as employed for money—Early use of gold and silver money—Much earlier than Greece—Probably first used in India—Mentioned in the Egyptian Code of Menes—Earliest accounts of mining—Mines of ancient and modern India—Cadmus—Expedition of Jason—Placers of Asia Minor and Spain—The Phrygians, Lydians, and Phœnicians—European commerce with India—Exhaustion of the Western placers—Dark ages of the early Levant—Lost arts—Rise of Greece and Carthage.

MONEY has become so important an agency of society, that to thoroughly comprehend its nature and function, its tendency and influences, are problems which enforce the attention not merely of the economist and financier, but of the reading world in general.

These problems can be solved, if at all, only in one way—by reference to the history of the precious metals. For although money has in all ages been formed in other ways than of gold and silver pieces, yet there is no age in which these in some country or another have not been employed for this purpose.

Of the vast accumulation of the precious metals which the modern world possesses, a considerable portion has been inherited from very remote times. This portion consists not alone of the coins in numismatic collections: much of it is in active circulation, either in the form of those

ancient defaced coins which are still current in the countries of the Levant, or as recoined into modern pieces. To roughly trace these inheritances, and form some idea of their cost to the present world, can scarcely fail to furnish suggestions of a more or less practical value in the treatment of monetary questions.

Apart from these questions the history of the precious metals possesses a value of its own. The circumstances of the production of gold and silver, their accumulation, movement, acquisition by conquest, loss, destruction, and treatment by law and custom, are replete with interest, and serve to throw light upon many departments of literature. In the search for gold whole races of people have been put to the sword, continents subjugated, religions and civilizations destroyed. In tracing this pursuit we discover new motives for the actions of heroes, and new circumstances in the development of society. The physical devastation to which it has subjected many parts of the earth opens another interesting page of history. And when these considerations are exhausted, there yet remains a vast moral question which such a history proposes to mankind.

The beginning of the history of the precious metals as money is commonly assigned to Greece about the ninth century before Christ,¹ but there are reasons for believing that it

¹ This refers to the coins imputed to Phidon of Argos. It is supposed that some of these pieces exist among the uninscribed specimens of early Greek coins still extant. ("Ancient Coins and Medals," by Noel Humphreys, London, 1850, p. 21.) Phrygian gold and silver coins are mentioned by Julius Pollux of a date from 1200 to 1400 B.C., but the authority has been regarded as doubtful. Homer alludes to coins (in this instance brass), among the Lydians, of a date which has been fixed at about 1184 B.C., but such an allusion in a mere poem, by an author whose epoch, indeed whose very existence, is uncertain, can hardly be deemed to deserve a place in history. Mr. Humphreys, however, regards the Lydians as the first, at least, in the Western world, who coined gold. ("Ancient Coins," p. 25.) "Shekels of silver current with the merchant" are mentioned in Genesis with reference to Abraham's purchase of the grave of Machpelah. This event is dated by biblical chronologists at about 1900 B.C., but as their inferences mainly depend upon the period at which Genesis

may be carried back to India, and to a very much more remote period of the past.

The mention of the ratio of value between gold and silver which occurs in the Egyptian code of Menes,¹ assures us of the use of these metals as money at a very early period in the history of that country.

According to Lepsius the era of Menes was 3893 B.C.; Bunsen says it was 3643 B.C.; while Wilkinson regards 2950 B.C. as its most probable date. The code, of which the merest fragments have descended to us, may have been, and probably was, of a much later date. Colebrook ascribes the Hindoo Code of Manu to the twelfth or fourteenth century B.C., and it is probable that these codes were the same. Indeed, the name of Manu appears to form a connecting link between ancient Hindostan, Egypt, and all intervening countries. The Hindoo Brahmins had their Manu or Menu; the Thibetans, Mani; the Lydians, Manes; the Phrygians, Manis; and the Cretans, Minos. All these nations were of Aryan stock, and even where this great parent race of a now lost antiquity stretched its empire in other directions than towards Egypt, it left traces of the same remarkable name for a god, a lawgiver, or a hero. The Siamese towards the South-East of Hindostan revered the name of Manu; the Germans, to the North-West, hallowed that of Mannus.

In the Hindoo Code of Manu specific instructions are given concerning the insurance of goods in transit, whether by land or water. It is difficult to conceive of insurance without the use of money, or to believe that originally money was not always composed of some substance passed at or near its commercial value, and, in communities advanced beyond the phase of barter, this substance was usually gold or silver.²

is supposed to have been actually written, there is room for error to the extent of nearly a thousand years. Whatever the date, the shekel, until the time of the Maccabees, was a weight and not a coin. ("Ancient Coins," p. 21.)

¹ Wilkinson's "Ancient Egyptians," ii. 241.

² History apparently affords two contradictions of this view: the

These considerations induce the belief that at least so early as the twelfth or fourteenth century B.C. gold and silver money was used in all the countries between the banks of the Indus and the Nile. Other considerations strengthen this belief and lengthen the antiquity of the period to which it refers. In a subsequent chapter of this work, entitled "The Ratio in Ancient Times," a fragment is quoted from Agatharchides which alludes to the use of gold and silver as money in Arabia (and this, by inference, carries it also into India) at a period which it is therein concluded must have been some fifteen centuries before Christ, perhaps earlier.

The remarkable commercial activity of the extremely ancient Phœnician cities Tyre and Sidon afford a further inference concerning the early use of gold and silver money, and its origin in India; for these colonies were established by the same remote Aryan race whose early traces, beginning in India, have been noticed to extend from Siam

machutes of Montesquieu's Africans and the *cacao* beans of the Aztecs. The former is an instance of a barbarous tribe which employed a numery money, and the latter one of a civilized race which used a species of intrinsic money, uncouth in form and of perishable nature. Montesquieu's view of the *machute* is not supported by evidence, and with regard to the Aztecs, they were a decaying race who had once, indeed, been civilized, but who were fast relapsing into barbarism, and adopting the customs and institutions of barbarians. Had the discovery of America been deferred for a few centuries, it would probably have found them extinct. The diversity of moneys employed by them in the time of Cortes, tends to prove the feudal character of the people. While in most of the Aztec provinces cacao beans were employed for small change, in some small pieces of cotton cloth were used for this purpose. Larger transactions were effected in some provinces by means of gold-dust in quills; in others by copper cut into small pieces shaped like a T. In several provinces Cortes found pieces of tin used as money. Bancroft's "Native Races," ii. 737. It is possible, nay, indeed, probable, that during the period of their rise, the Aztecs used gold pieces for money, but that this practice had ceased from the exhaustion of the ancient placers of Mexico, or else from arbitrary interdict by their government. See considerations on this subject in chapter xxxix. of the present work.

on the East, to Germany and Egypt on the West. A commerce so wide-spread and important could hardly have grown up without the agency of money at home, and of money composed, at least in part, of materials that would be likely to find, as materials, general acceptance abroad.

This consideration would carry the use of the precious metals as money back to a period of twenty-seven or twenty-eight centuries before Christ, and perhaps even indicate it to have been an invention of the Aryan race while that race was yet a nation.

The existing physical aspects of India, and the few fragments of (Western) history relating to the money of that country, which have survived the wreck of time, confirm the view that the precious metals were used for money in that country at a very remote period.

Pliny says : "The Dardaneans inhabit a country the richest of all India in gold mines, and the Selians have the most abundant mines of silver. . . . In the country of the Naraens, on the other side of the mountain Capitalia, there is a very great number of mines, both of gold and silver, in which the Indians work very extensively. . . . Just within the mouth of the river Indus there are two islands named Chryse and Argyre, so called, as I think, from the mines of gold and silver which are found there ; for I cannot believe, what some have asserted, that the soil on them consists wholly of those metals."

The names of the peoples and places mentioned by this author cannot be satisfactorily identified ; the dates are also uncertain, for Pliny was in the habit of quoting from all the authors within his reach, and without much regard to chronological order.

It is, however, probable that Pliny's account relates to a period which even at his time was ancient : for it is certain that India had for many centuries previously been in the habit of procuring supplies of silver, through the agency of the Phœnicians, from Greece and Spain.

During the rivalry between Carthage and Rome for the trade of the Orient, both of these States exported silver to India, and probably obtained gold in return. In the latter days of the Commonwealth, or early ones of the Empire, this trade, now wholly in the possession of Rome, took from Europe a large sum of silver every year, and this was also exchanged in part for gold. During the Middle Ages the Italian States were still the channel by which gold, and even silver, flowed from India to Europe.¹

Gold is still extracted in small quantities from the sands of streams which issue from the Himalaya mountains, and from the head waters of the Ganges.² The rivers of the Deccan, of Orissa and of Berar still carry down gold. Some of the rivers of the Punjab and of Cashmere contain golden sands. So of the Sutlej and other streams in its neighbourhood. Gold and silver mines also occur in Goleonda, the Carnatic, Assam, and Bengal;³ and there are circumstances connected with some of these deposits of the precious metals which indicate that they were worked in very ancient times.⁴

The earliest specific mention of gold or silver mining contained in Western history is derived from the story of Cadmus, a Phœnician, who in about 1594 B.C. opened a

¹ Pliny; Jacob's "Hist. Prec. Met.," London, 1831, v. i. p. 352; Yeats' "Hist. Commerce."

² Washing for gold is conducted at the present time in Rohilcund, and gives employment to a particular caste of persons. "App. Encyc.," 1st ed. ix. 181. New and rich gold deposits are said to have been discovered in November, 1878; although other advices call them old and sterile. They are located at Wynaad, a place situated in the Madras Presidency. Within an area of 25 by 13 miles there are said to have been discovered ninety outcrops of auriferous quartz reefs, yielding from 5 dwts. to 200 oz. of metal per ton. It would indeed be strange if any important auriferous deposits have been overlooked in so old and long-searched a country as India.

³ Malte-Brun, ed. Phila. ii. 123. No silver mines are worked at the present time. MacCulloch in "Encyc. Brit.," 8th ed. xv. 470.

⁴ Tiefenthaler, i. 222-274, in Malte-Brun, ii. 123 *note*.

copper and gold mine in Thrace, and carried thither the alphabet and other germs of civilization.¹

The next account of this character is furnished by the famous adventures of Jason.

This hero was also a Phœnician, and his expedition from Greece to Colchis in Argos, which was in the neighbourhood of the modern Batoum and Kars, has given the name of Argonauts to all gold seekers. The date of Jason's voyage is fixed by the chronologists at 1263 B.C., a period which coincides with other gold seeking transactions, not only of Phœnicians, but also of Phrygians. Jason rowed from Thessaly in a fifty-oared barge, along the coasts of the Ægean, Propontine, and Euxine seas to Colchis. Returning westward he passed Thessaly, coasted the Ionian, Tyrrhenian and Ligurian seas, until he reached Sardinia, and then returned to Greece. Relieved of the ornament which adorns this transaction, it seems to have been one of many expeditions after the precious metals, partly heroic, but mainly piratical, with which the history of the older nations abounds. Sardinia at that period contained rich placers of gold,² and it was probably to obtain this metal that Jason and his companions undertook that part of their memorable voyage which carried them westward.³

The next Argonauts of whom we have any account were the Phrygians and Phœnicians.

The Phrygians, whose national cap was wont to surmount the head of liberty on American coins, worked the auriferous sands of the Pactolus, now the Sarabat, which flows near modern Smyrna. The period of this industry is un-

¹ According to the Abbé Barthélemy, the era of Cadmus was as stated in the text; according to others it was 1493 B.C. The mine is located by Strabo, *xiv. chap. v.* Bohn's ed.

² Jacob's "Hist. Prec. Met.," London, 1831, v. i. p. 104.

³ The Phœnicians colonized the island and probably worked its silver mines B.C. 1000. The Carthaginians held it in B.C. 509, and perhaps earlier, and worked its silver mines until B.C. 237. Heeren's "Researches, African Nations," Oxford, 1833, v. i. p. 71. The Carthaginians forbade strangers upon pain of death to land in Sardinia or Spain. *Ibid.*

certain. It commenced some twelve centuries before Christ, or earlier, and was not entirely relinquished when Herodotus wrote, B.C. 445; for this historian states that Pytheus worked the placers so late as B.C. 470.¹ These placers were the source of the vastly exaggerated wealth of Cræsus, Midas, and Pytheus; the last of whom, in his greed for gold, condemned vast numbers of his own subjects to the mines.²

Pytheus is said to have possessed, at the period of Xerxes' invasion, B.C. 470, no less than 2,000 talents of silver, and 4,000,000, lacking 7,000, Persian staters of gold.³ The gold stater and daric are regarded as synonymous,⁴ and weighed about 12s. each.⁵ On this basis the treasure of Pytheus has been estimated at £3,600,000,⁶ but this sum seems excessive. The ancient method of notation was very liable to error, from the different ways in which a large sum was susceptible of being expressed in Greek or Roman numerals.⁷

The Phœnicians worked the gold placers of the Tartessus

¹ Herodotus, iii. cap. 26, 27.

² Jacob, v. i. pp. 16-19, and authorities quoted.

³ Herodotus, iii. 26, 27.

⁴ Boeckh, "Econ. Athen.," book i. ch. 5.

⁵ There was also a silver stater of Persia, of which some are still extant, containing about 2s. 9d. silver (Boeckh, *passim*). The gold of Pytheus may have been expressed in these, in which case his treasure would scarcely have exceeded half the sum computed by Larcher.

⁶ Larcher's "Notes on Herodotus," vol. ii. p. 356.

⁷ "The Sanscrit numerals found by the Arabs in India, and with slight modifications in form brought westward by them in their conquests, began to be known in the south of Europe in the eleventh century, principally, however, in translations from Arabic works on arithmetic and algebra. Their first application to money calculations was made by a merchant of Pisa, Leonardo Tibonacci, ironically called by his fellow-townsmen Bigollone (Bighellone, *i.e.* Thick-head), in a work written by him in 1202. The introduction of this decimal system of notation and of the Arabic numerals, in the room of the old Roman letters, which were extremely inconvenient for any process of computation, must have immensely assisted the art of keeping accounts and the power of abstruse reckoning." Yeats' "Hist. of Commerce," p. 372. See also Appendix A, chapter xxv. of the present work.

(Tarshish?), now the Guadalquivir, in Spain; an industry that began previous to 1100 B.C.

Though perhaps profitable enough at the outset to merit the extravagant references to it in ancient history, it must have soon dwindled to trifling dimensions. It may have continued, and probably did continue, for several centuries, but only on the small scale exhibited in more modern times in the workings of the Tagus sands, which during four centuries, from A.D. 1147 to A.D. 1550, averaged less than £1,000 a year.¹

Rivalry in the trade of India, where the ratio of gold to silver was 4, while at the same time it was 13 in Persia, is observable even at this early period. In B.C. 517, Phœnicia then subject to Persia, was compelled to pay her tribute in silver. Unless the payment had been exacted in that metal the Phœnicians would probably have preferred to pay it in gold, for the latter metal could have been procured by them in India at a much lower ratio than that current in Persia. The probable motive of the Persians for exacting the tribute in silver was to exchange it with India at a profit.

Both the Phrygians and Phœnicians are regarded by ethnologists as Aryan (East Indian) races, who had found their way into Asia Minor by way of the Persian Gulf. They were of darker complexion than the aborigines, and introduced into the country of their adoption, and afterwards into Egypt and Europe, a multitude of arts which were previously unknown in those countries: among others metallurgy.

The auriferous exhaustion of Phrygia and Spain, the first by the Lydians, the second by the Phœnicians, seems to have occurred at about the same period, that is to say, from about 1200 to 500 B.C., and to have been followed by an era of dearth of the precious metals in Levantine Europe. This may, however, have been occasioned in part through the conquest of Asia Minor by the Persians, who doubtless

¹ See chapter v. on "Mines of the Middle Ages."

carried into the East all the precious metals they could find.

It was during these dark ages of the Levant that Tyre and Sidon perished, and with them many of those industries which, until a comparatively recent period, were known as the Lost Arts. Some of these, however, were destined to survive yet awhile. These were carried to Greece, where they flourished during the period of progress which had already begun in that country. They were also carried to Carthage, where they remained until all that survived of Punic civilization was overthrown by the arms of Rome.

CHAPTER II.

EARLY MINING AND PLUNDERING.

Conquests of Darius and Alexander—Sacrifice of slave life in ancient mines—Siberia (Bactria)—Egypt—Samos—Silver mines of Greece—Their modern re-opening—General character of ancient acquisitions of the precious metals—Agency of slavery and conquest—Impossibility of tracing the value of these acquisitions to a basis of pecuniary cost.

ABOUT B.C. 500 Darius of Persia undertook that series of military expeditions which, like the later ones of the Spaniards in Mexico and Peru, appear to have had for their principal object the acquisition of the precious metals; for after having attained this object their other fruits seem gradually to have been abandoned. Darius conquered and plundered Bactria, Asia Minor, including Phœnicia (at that time the sole depôt of the metallic products of Spain), the Greek islands, Thrace, Egypt, &c., and carried away to Persia probably the bulk of the gold of placer origin, which was then to be found in Europe and Africa.¹

Besides obtaining this spoil, he levied tributes in gold and silver upon the conquered countries, amounting annually to a sum which Gibbon and Rennel have computed to be equivalent to about three millions and a quarter sterling.² According to the inference of Gibbon,³ this revenue was the surplus after the expense of maintaining the army, and provincial administration had been discharged. Whatever the amount was, the tribute was probably paid for only a few years, because not long afterwards the conquered countries asserted their independence.

¹ There are still extant two gold staters or darics of this period, one of which is in the collection of the Earl of Pembroke. *Jacob*, v. i. p. 15.

² Herodotus, iii. cap. 95. ³ Drawn from Herodotus, i. cap. 192.

It is probable that a portion of this treasure found its way back into Europe some two centuries later, when Alexander the Great plundered Persia and the surrounding countries,¹ but of this we cannot be sure, for, according to Jacob, the Macedonian expended and lavished a large portion of his spoil of money in the subjugated countries and in those which were between them and Greece.

Alexander lived about thirty-two years and reigned but twelve; yet during this brief existence his passion for acquiring the precious metals, which with his countrymen and posterity has passed for love of conquest, cost the lives of several millions of human beings,² and the liberty of the many others whom he condemned to degradation and slavery. The pecuniary results of his expeditions are given at £12,000,000 in gold and silver, plundered from Babylon and Susa, and £20,000,000 in the same metals from Persepolis and Pasargada.³ This makes no allowance for the spoil of Bactria, India, &c. Appian calculated the spoil of Persia alone at a sum which computed by weight of metal equals £40,000,000 to £50,000,000; and Jacob, who quotes Appian, regards "even a larger amount" as not extravagant for the precious metals that could have been collected in Asia by the Macedonian hero.⁴

The coins of the mintage of Alexander are so abundant even at the present day as to be more common than "any American gold piece of the last century."⁵ But this is not saying much, and there is probably but little left of the metal which passed through his hands.

In the stock of gold which has come to us from antiquity a small portion was derived from the outcroppings of ancient quartz mining in Siberia, Egypt, and Greece. This

¹ Athenæus, book vi. ¶ 19.

² "Histories which laud such a monster as Alexander ought to be consigned to the flames." Phillips in "Putnam's Encyc.," 572, art. "Tyre."

³ "Appleton's Encyclopædia," i. p. 312.

⁴ Jacob, v. i. p. 129.

⁵ "App. Encyc.," xii. p. 444.

industry does not appear to have sprung up until after Darius had gathered the world's stock of precious metals into Persia, and it seems to have fallen off after Alexander had captured this stock, and the subsequent accumulations up to his time, and his army had lodged in Europe what remained of it upon their return to Macedon.¹

The sacrifice of life and the cruelties which attended the working of the ancient quartz mines are attested by the accounts of authors who have visited them.

Gmelin, who examined the mines of Siberia in 1733-43, and inspected what remained of the old workings, states that the ancients must have excavated the passages underground with incredible pains, because they had no better tools than copper wedges and hammers. The passages were so narrow that the workmen must have crawled on their bellies to get at the quartz, from which they picked thin filaments of metal with the sharpened fangs of boars. How they obtained light and air has not been determined. The least accident to the supports of the passages must have resulted in death to the miner. In some instances the supports had given way, and in the débris were found the bones of those who had perished.²

Diodorus, who visited Egypt fifty years before Christ, thus described the method of mining gold in that country: "On the confines of Egypt and the neighbouring countries there are parts full of gold mines, whence, with the

¹ For details concerning ancient Siberian (Bactrian) gold quartz mines, ancient Egyptian (Nubian) gold mines, and ancient Greek gold mines, consult Jacob, chap. ii. and the authorities quoted. One of these, Diodorus, states that in the palace at Thebes (Karnak) an inscription relates that the annual revenues of the Egyptian monarch from his gold and silver mines amounted to "32 million *minas*, according to the rate of silver." Jacob has calculated this at about £6,000,000, but it seems improbable. For Bactrian nickel coins B.C. 250 to 300, I am advised to consult General Cunningham in "London Numismatic Chronicle," and Dr. Flite's "Researches on Nickel," but these works are not to be obtained in California, and I have not seen them.

² Gmelin's "Journey through Siberia," 4 vols. Gottingen, 1751-2. Vol. iii. §§ 299, 300, 304.

cost and pains of many labourers, much gold is dug. The soil is naturally black, but in the body of the earth there are many veins, shining with white marble and glittering with all sorts of bright metals, out of which those appointed to be overseers cause the gold to be dug by the labour of a vast multitude of people. For the Kings of Egypt condemn to these mines not only notorious criminals, captives taken in war, persons falsely accused, and those with whom the king is offended, but also all the kindred and relations of the latter. These are sent to this work either as a punishment, or that the profit and gain of the king may be increased by their labours.

“ There are thus infinite numbers thrust into these mines, all bound in fetters, kept at work night and day, and so strictly guarded that there is no possibility of their effecting an escape. They are guarded by mercenary soldiers of various barbarous nations, whose language is foreign to them and to each other, so that there are no means, either of forming conspiracies or of corrupting those who are set to watch them ; they are kept to incessant work by the rod of the overseer, who, besides, lashes them severely. Not the least care is taken of the bodies of these poor creatures ; they have not a rag to cover their nakedness ;¹ and whoever sees them must compassionate their melancholy and deplorable condition, for though they may be sick or maimed, or lame, no rest, nor any intermission of labour is allowed them.

“ Neither the weakness of old age, nor the infirmities of females, excuse any from the work, to which all are driven by blows and cudgels, until borne down by the intolerable weight of their misery many fall dead in the midst of their insufferable labours. Deprived of all hope, these miserable

¹ In Egypt there are about fifteen rainy days in a year ; and although the climate is usually warm, it is often bleak in the day-time and chilly at night. “ Egypt,” by the present writer, “ Transactions American Philosophical Society,” Oct. 2, 1874, pp. 3, 4 ; also Stephen’s “ Travels in Egypt,” 1837.

creatures expect each day to be worse than the last; and long for death to end their griefs.”¹

Of the mines of Samos, Theophrastus about 240 B.C. wrote:² “Those who dig in the mines cannot stand upright at their work, but are obliged to lie down, either on their back or on their side; for the vein of earth they dig runs lengthwise, and is only of the depth of two feet, though considerably more in breadth, and it is enclosed on every side with hard rock, from which the ore is obtained.”

We now turn to the silver mines of the ancients.

Before the Peloponnesian War Attica was a free State, and her silver mines³ were private properties worked for the benefit of their owners.⁴ The produce was chiefly sold for export; the State employing a numerary money.⁵

With the termination of that war, B.C. 404, the citizens lost their freedom, the lands were subjected to emphyteusis, a species of feudal tenure, and the mines were worked by slaves for the benefit of the tyrants who ruled the fallen State.

In order to prevent their running away, the slaves were constantly kept in companies and under rigid inspection. No work beyond what fear induced them to perform was to be expected from labourers under such circumstances. Excited by their sufferings they frequently broke out in insurrections, in which vast numbers of lives were destroyed and much territory desolated.⁶

The principal mines were at Laurion in Attica, referred to in Xenophon's essay on the Revenues of Athens,

¹ Diodorus, book iii. cap. i.

² “De Lapidibus,” cap. cxix.

³ I have met with no other account of the working of her gold mines than the one given from the fragment of Theophrastus.

⁴ A perpetual tax of $\frac{1}{24}$ th part of the produce was paid to the State. On the other hand, the mines were exempted from extraordinary taxes, and their owners from the performance of liturgie. Boeckh, book iii. ch. 3.

⁵ See “History of Money,” by the present writer, chapter iv.

⁶ Jacob, v. i. p. 77; consult the revolt at Cape Sunium in Athenæus, book vi. ¶ 104, Bohn's ed.

written about B.C. 353. From a passage in Pausanias, who wrote about B.C. 475, it would appear that the working of these mines was abandoned before his time ; and it may be inferred that after the loss of Attic liberty they declined very rapidly in productiveness.¹

Rising from the obscure details of the early history of the precious metals, it may not be amiss before opening its more modern and authentic chapters to briefly characterize its general features. These are slavery and conquest ; slavery being the means by which the precious metals were chiefly first acquired, and conquest those by which their possession was transferred from one nation to another. Their price to their original producers, even were it calculable, can be of no possible interest to the modern world. The blood and sweat which they originally cost were not sacrificed by the races who now possess them ; but by others long since extinct and forgotten. We of later times have come into their possession by violence. They are a deeply ensanguined inheritance, and it is not until the millions of lives which this violence has involved can be reduced to a pecuniary equivalent, that the value of what portion of the precious metals has come to us from the ancient times can be reduced to a basis of cost.

¹ The ores obtained from these mines contained lead and other metals, and were reduced by smelting. The smelting works were at Ergasteria, a small seaport about forty miles from Athens. The heaps of scoria and ekvolades, or mining refuse left by the ancients, imperfectly reduced by their processes, excited the attention of modern French and Italian capitalists, who about the year 1870 leased the property from the Greek government, and began the reduction of the refuse. Over a million pounds sterling worth of metal have already been obtained from it. A pretty full account of this singular revival will be found in a communication addressed by the American minister, John M. Francis, to the State Department at Washington, and published in the "United States' Commercial Relations" for 1873, pp. 661, *et seq.*

CHAPTER III.

CONTESTS FOR THE MINES OF SPAIN.

Spain the ancient Dorado—The Phœnician Argonauts—The Carthaginians—Extinction of native races in the Spanish mines—Origin of the African slave trade—Contest between Carthage and Rome for the Spanish mines—Sacrifice of life—Downfall of Carthage—Enslavement of the Carthaginians in the silver mines which they had previously owned—Produce of these mines under the Romans—Parallel between the campaigns of Hamilcar, Hannibal, Cæsar, Cortes, and Pizarro—Mischief caused by the search for the precious metals.

THE principal portion of the silver bequeathed to us from antiquity comes from Spain, the mines of which were worked by the Carthaginians from B.C. 480 to B.C. 206. The product was conveyed to Carthage, where all that remained of it, not disposed of by the year B.C. 146, was captured and carried to Rome.

Spain was to the ancients what Mexico and Central and South America became in later ages to Spain, the Dorado, the richest mining country of the world, the place where gold and silver were found in the greatest abundance. The fate of its aboriginal inhabitants, the subsequent struggles among leading nations for the mastery of its precious metals, the destruction of its forests for the purposes of the mines and the consequent exposure of its soil to drought and devastation, the neglect of agriculture in the absorbing pursuit of metallic wealth, and the resulting poverty and backwardness of its population, both aboriginal and colonial—can all be read by the nearer pictures which are accessible to us of Mexico and Peru.¹

¹ Heeren's "Researches, African Nations," vol. i. p. 270.

The Carthaginians, with their disciplined troops and superior weapons, easily reduced the aborigines of Spain to slavery and compelled them to explore the earth for gold and silver, inflicting on them a series of calamities which speedily exhausted their strength and thinned their numbers.¹

"These people," says Diodorus, "though by their labour they enriched their masters to an almost incredible extent, did it by toiling night and day in their golden prisons. They were compelled by the lash to work so incessantly, that they died of the hardships in the caverns they had dug. Such as by great vigour of body continued to live, were in a state of misery which rendered death a preferable fate."

This cruel immolation of the natives of Spain led to the practice of supplanting them with races imported from Africa, and here began on a large scale² that infamous traffic in African slaves which eighteen centuries later, and for a similar purpose, was revived by the Spaniards in America.

Says Jacob: "This oppression and exhaustion of the native labourers led to the trade in human beings which was carried on by the Carthaginians with the interior of Africa, and supplied to Andalusia the place of those native workmen who had been destroyed by the excessive toil imposed on them by their Asiatic intruders. This horrid traffic was extended and continued, and it augmented the produce of the mines of Spain in such a degree as to have an influence on the whole commerce of the world at that period. That influence was continued till the government of the Romans, who succeeded the Carthaginians in the mastery of Spain, had fallen into the hands of the Gothic Monarchs: "a period of more than seven hundred years."³

That the Spanish mines were the cause of the fall of Carthage is as little to be doubted as that the American

¹ Jacob, v. i. p. 94.

² Negro slaves had, to a small extent, been previously introduced into Etruria. "App. Encyc.," xiv. p. 698.

³ Jacob, v. i. p. 94.

mines occasioned the ruin of Spain. They corrupted the government of Carthage, and led to the neglect of military discipline and precautions; they introduced a mercenary and gambling spirit into all enterprises, they created monopolies of wealth; they impoverished the masses; they occasioned the abandonment of those industries which had built up the State, and they eventually so crippled its power, that in the memorable contests that were to ensue with Rome for the mastery of these same mines, Carthage was unable to successfully cope with its more vigorous adversary.

"Rome trusted to itself and its sword," says Heeren, "Carthage to its gold and its mercenaries. The greatness of Rome was founded upon a rock; that of Carthage upon sand and gold-dust."¹ At this period Carthage had abandoned its numcrary money and adopted gold and silver coins; while Rome still held to her copper tokens and was as yet free from the fatal influence of the mines. We shall ultimately see Rome subjected to a similar trial and ruined in the same way.²

It will now be proper to consider somewhat more in detail the influence of the Spanish mines upon the fate of Carthage.

Up to about the fourth century B.C. the Carthaginian trade with India appeared to absorb all of the small amount of the precious metals which were obtained in Spain; for there was no market for them either in Carthage or Rome, on account of the token moneys employed by both of those States. At this period it would appear that mining was reduced to a regular system in Spain, and that far richer

¹ Heeren's "Researches, African Nations," vol. i. p. 285.

² Sir Archibald Alison (*Essays*, London, 1850, vol. iii. p. 485) ascribes the fall of Rome to the exhaustion of the Spanish mines, and the resulting contraction of the currency, and fall in prices. Had the eminent author included in these causes the policy of conquest, the monopoly of land, and other wealth, the neglect of industry, and the impoverishment of the masses, he would have more fully earned the distinction of being the first to suggest a series of causes of sufficient magnitude to account for the most extraordinary decline of civilization known to history.

deposits of silver than before were discovered and worked ; for we find Carthage endeavouring to dispose of her surplus supplies of that metal by offering them in the markets of Rome. This she was enabled to do in virtue of a commercial treaty which she had effected with Rome so far back as B.C. 508.¹ At all events about B.C. 300, and long before Rome adopted silver for money, tridrachmas, some of which were Carthaginian, and therefore of Spanish origin, were circulated in Italy.

It cannot be determined whether the Carthaginians adopted silver money before or after this date. On the one hand it might be surmised that they would hardly have shipped their silver to Rome before trying to make a market for it at home ; while on the other it might be conjectured that it was not until they found how little of it could be disposed of in Italy, that they resolved as a last resource to alter their own monetary system and accord a place in it to silver.

The change probably took place before the year B.C. 238, which is that of Hamilcar Barca's expedition in Spain ; for Appian says that in this expedition, which was probably beyond the usual limits of the Carthaginian colonies, Hamilcar took much booty and "sent great treasures to Carthage to gain the people."² As he could hardly have gained the people with gold and silver, were the token currency still in vogue, it is regarded as probably safe to assume that at this date the change had been effected.

Meanwhile Carthage kept up her trade with the Orient, and through this source disposed of a portion of her metallic wealth. The profits of this trade, coupled also, perhaps,

¹ For the original of this treaty see Polybius, iii. 22, 26. A digest is published in "App. Encyc.," article "Carthage." The treaty was renewed five times. The original treaty was made B.C. 508 ; the first and second renewals are alluded to in the digest to the lost books of Livy ; the third renewal occurred B.C. 278 ; the fourth B.C. 241 (close of first Punic War) ; and the fifth B.C. 228. This last one marked the Spanish boundary between Rome and Carthage at the river Iberus.

² "Appian," i. p. 229, quoted in Heeren, "African Nations," vol. i. p. 268.

with the appearance of Carthaginian silver in Italy, excited the cupidity and envy of Rome, and led to the first Punic War, which began B.C. 264 and ended in 241, Rome obtaining the islands of Sicily, Sardinia, and Corsica, all of them mining countries, and 1,200 talents of indemnity from Carthage; terms of peace that indicate the object of the war to have been the acquisition of the precious metals.

In B.C. 238 Hamilcar Barca, without authority from his government, conducted a marauding expedition through Spain, and sought to justify his conduct with the Carthaginian authorities by contending that the extension of their arms into the interior was necessary in order to make good the loss of the mines in Sicily, Sardinia, and Corsica:¹ an argument that reveals at once the importance which was now attached to the mines, and the chagrin that was felt for the loss of those in the Italian islands.

In B.C. 209 Hamilcar died in Spain, leaving the command to his son Hannibal, who, still without authority from the Punic government, proceeded to further ravage the country and acquire more mines.

Pursuant to this policy, in B.C. 220 he stormed, sacked, and put to the sword Carteia,² a wealthy city and capital of the Olcades. In the following year he besieged, captured, and sacked Saguntum (the modern Murviedro), a Greek colonial city; sending the spoil captured in this city and elsewhere to Carthage, there to appease the authorities,

¹ "App. Encyc.," viii. p. 702.

² Livy. Carteia was in the Bay of Gibraltar nearly where stands the modern San Roque. It was founded by the Phœnicians under the name of Hieraclea; refounded by the Carthaginians as Carteia; subsequently occupied by the Olcades, a native or mixed race, and plundered by Hannibal B.C. 220, and by Julius Cæsar about B.C. 45. The writer possesses four ancient copper coins, exhumed from the submerged ruins of this city about the year 1830. One is Phœnician with the word *IRIPPO* in Phœnician characters; one is Carthaginian with the word *CARTEIA*, also in Phœnician characters; one is too much defaced to decipher; and one is of the mintage of Julius Cæsar about B.C. 50, brought into Carteia no doubt after the Dictator had conquered the city.

win the populace, purchase supplies, and engage fresh troops for further operations.

Here, however, began the end of Punic rule in Spain, for the capture of Saguntum afforded to Rome precisely that pretext for another war with Carthage which the necessities of the Commonwealth had rendered desirable.

These necessities were originally of her own creation. In B.C. 269 she had formally adopted silver as a portion of her monetary system, not yet in the form of intrinsic coins, but as highly over-valued numeraries representing sums in copper tokens. Once adopted, however, the use of silver created a necessity for more regular and considerable supplies than could be obtained from her own mines or by purchase; and this necessity, together with the always dominant desire of acquiring the means to prosecute commerce with the Orient, must be regarded as the governing impulses that eventually led Rome into the second Punic War.

Beginning B.C. 219, this war, which was carried on almost exclusively in Spain, ended with the conquest of that coveted province by Rome in B.C. 207, and its final evacuation by the Carthaginian forces in B.C. 202.

The sinister sceptre of the silver mines had passed away from Carthage; it was now to be wielded by Rome.

Of the Spanish mines at this period Pliny says:—"Some have related that Asturias, Galicia, and Lusitania furnish two thousand pounds¹ of gold annually; but Asturias supplies the most; nor in any other part of the world, during so many ages has so great a quantity been obtained. In every species of gold there is a proportion of silver; in some one-tenth part, in others a ninth, and in others an eighth. In one kind of gold alone called Albicavense, there is only one thirty-sixth part of silver, on which account it is more valued than any other."²

¹ Pliny, xxxiii. ch. 21. A Roman pound (libra) was equal to about 5,250 grains troy. Dr. Arbuthnot.

² Pliny, xxxiii. ch. 23. These facts indicate that the art of separating gold from silver was, at the period mentioned, in a very rude state.

A silver mine called Bebulo supplied Hannibal with 300 pounds weight of silver daily. This mine is now known to be the same with that of the modern Guadalcanal in Cordova.

There is a significant parallel between the campaigns of Hamilcar and Hannibal in Spain, Cæsar in Gaul, Cortes in Mexico, and Pizarro in Peru. All these expeditions were undertaken with the object of acquiring the precious metals; all of them except those of Cæsar and Pizarro were unauthorized by the civil authorities of the conquering nation; and in all of them the commanding general employed the treasures obtained from conquest in the bribery of officials and the corruption of his countrymen. In all of them the object of contention, and the cause of the fearful loss of life which this contention involved, proved to be the ruin of the men and the curse of the nations that acquired it; causing them to revolutionize their monetary systems, and entailing upon them from this source alone the jeopardy of their industries and the impoverishment and decay of their peoples.

CHAPTER IV.

ROMAN WARS FOR GOLD AND SILVER.

The triumphs of Scipio—His spoiliations—Influence of the Spanish mines upon Rome—Revolution of its monetary system—Expeditions of Marius, Sylla, Pompey, Paulus Æmilius and Julius Cæsar—Their objects and results—Cæsar's spoils in Gaul—Their arrival in Rome causes a temporary change in the value of gold and silver—Cæsar's pretended gold mine at Aquileia.

THE conquest of Spain was effected in B.C. 206, when Scipio returned to Rome, carrying with him a vast mass of silver. How any considerable quantity of the precious metals could have accumulated in a country which had already been twice ravaged by Carthaginian commanders, is difficult to surmise; but the statement can scarcely be doubted, for there is corroborative evidence of the new arrival of an unusual quantity of silver in Rome at this period. The Punic camps probably yielded a large portion of it; for Hannibal's troops consisted principally of mercenaries, and in the numerous forays which they had committed upon the country, and from the enslavement of the Spaniards in the mines, they must have obtained a considerable amount of silver which had not found its way to Carthage when they were defeated.

After enjoying the glory and securing the profits of his campaign in Spain, Scipio, in the year B.C. 201, carried the war into Africa, completely extinguished the power of Carthage, and returned to Rome again, laden with vast spoils of the precious metals. Livy says: "*Decem M talentum argenti descripta pensionibus æquis in annos L solverent;*" and "*argenti tulit in ærarium pondo centum millia XXXIII.*"

During the next century Carthage itself was captured, sacked, and demolished, and all of its myriads of inhabitants who escaped the sword were sold in the slave markets of Rome, or condemned to the hideous labour of the Spanish mines.

It is needless in this place to enlarge upon the atrocities and vast sacrifice of life which formed the price of the Spanish-Carthaginian spoil¹—a price which metrologists, upon the easily found predicates of supply and demand, have affected to reduce to an exact pecuniary basis. Nor is it worth while to trace the various steps of that demoralization of public and private virtue which was occasioned by the presence of the treasure in Rome, and from which even the conqueror himself did not escape.² The subject of chief concern herein is the influence of the new conquest upon the history of the precious metals, and to this all subordinate topics must give place.

A year before the conclusion of the Spanish campaign, and Scipio's return to Rome, the quantity of the precious metals captured by his forces, and conveyed to the capital, was so great as to give rise to that more complete establishment of silver as money for which the previous appearance of Carthaginian silver in Italy, and its adoption as an over-valued and qualified tender, had paved the way.

In B.C. 269 the Roman Senate had authorized the coinage of silver denarii, weighing each about 73 troy grains pure, and designed to represent, for certain purposes only, 10 copper asses, which were then over-valued tokens. This

¹ The inhabitants of many Spanish towns, Astupa, for example, which had afforded assistance to the Carthaginians, were slaughtered to a man; and sixty years later, when the younger Scipio took Carthage, he gave over this noble city to fire, sword, and rapine, razed it to the ground, and led 60,000 of its refined citizens to slavery and the Spanish mines, of which they had so recently been the opulent masters.

² In B.C. 187 Lucius, his brother, was publicly accused of having embezzled a portion of the Spanish spoil, whereupon Scipio destroyed the evidence offered in open senate, and suffered his brother to be convicted and punished. When afterwards accused of the same crime himself he declined to make any defence.

system was continued by the legislation of B.C. 250, except that the asses were coined of less weight, that is, of 875, instead of $1,312\frac{1}{2}$ grains each, as before—a matter of no further consequence than that it saved so much copper to the State.¹ In B.C. 216 the over-valued denarius, still of qualified tender, was reduced in weight to $62\frac{1}{2}$ grains, and made to represent 16, instead of 10, over-valued asses, each of $437\frac{1}{2}$, instead of 875 grains as before. In B.C. 207 the denarius of the same weight and relation to the copper as—the latter being now reduced in weight to $237\frac{1}{4}$ grains—was made a full legal tender, and the Roman numerary system came to an end.

The bright mantle from the Spanish mines which had involved Rome in all the expenses of a fierce and protracted contest, and had cost the lives of myriads of her citizens, the mantle in which she had now clothed her monetary system, did not rest so easily upon the State as had been imagined. She had destroyed her great rival, and had gained the coveted Indian trade; but she had imbrued her hands in innocent blood, and subjected her body politic to a source of political corruption, industrial disturbance, and social decay.

This was not all. It was soon discovered that silver coins were not everlasting. The export to India, the disappearance of coins into surrounding countries and into domestic hoards, the wear, tear, and loss of metal by abrasion, clipping, and accident—all these occasioned an impairment of the stock of coins which could only be made good with fresh and regular supplies of silver.

The only adequate source of such supplies was the Spanish mines; and to these Rome applied herself with a vigour as great as it was pitiless. The native races and Carthaginian captives having first been immolated in the mines, condemned criminals were supplied to them from Rome, and, in

¹ The common view derived from Pliny is that the Roman copper coins were intrinsic, and that this reduction effected a cancellation of one-half of all existing debts. In the "History of Money" this view is discussed and refuted.

later times, even legionary soldiers.¹ By these means their productive capacity was raised to the highest point which the mechanical resources of the age permitted. With all this, it appears that they were unprofitable, for the slaves, however cruelly treated, had to live, at least for a time, and the bare cost of food for these miserable victims must have exceeded the produce of the mines.

Polybius, as quoted by Strabo, informs us that the silver mines near to New Carthage, in Spain, were very productive. They were distant from the city about twenty furlongs, and embraced a circle of forty furlongs, wherein 40,000 workmen were constantly employed, who at that time produced for the Roman people 25,000 drachmas daily.²

If the drachma be taken at 9*d.* sterling money,³ the value of the produce of the mines would exceed £900 per diem. This distributed among 40,000 slaves would be about 5½*d.* each. The pay of a foot soldier at that time was two *oboli* or three *asses*, equal to about the same sum.⁴ To enlist his interest in the capture of spoil, the Roman soldier originally received no pay at all, his emolument coming from the plunder of the enemy, which was distributed in the form of *donativum* or *congiarium*. He was first paid B.C. 407; but as spoil was still made to form the chief incentive to his exertions, the stipend must be regarded as having been barely sufficient to provide the necessaries of life.⁵

¹ Merivale's "History of Rome."

² "Polybii Fragmenta," tom. iii. ed. Ernesti.

³ It weighed about 67 grains troy. Boeckh, book i. ch. 4.

⁴ At this period there were 16 *asses*, which were now intrinsic, to the denarius of 62½ troy grains of pure silver. As the denarius must be regarded as having also fallen in purchasing power to its intrinsic or bullion level, this would make the pay of the soldiers equal to the amount stated in the text; not 2½*d.* sterling as given by Dr. Adam, "Roman Antiquities," ed. London, 1854, p. 329.

⁵ Jacob, v. i. p. 101, is in error when he doubles the soldier's pay to cover the cost of his food. Clothes and corn were both deducted from the stipend. Adam, "Rom. Antiq.," p. 330.

Such being the case, the produce of the mines could scarcely have purchased more than sufficient to keep alive the miserable beings who were condemned to work them—to say nothing of the expense of machinery, tools, timber, lights, and other capital required to be employed in their working, nor of transportation, refining, and taxes afterwards. Hence it is quite safe to conclude with Jacob that “the silver procured must have cost more than its current worth.”¹

Another reason for this will appear upon reflection. When these mines were worked by the Romans there already existed in their own markets a mass of the precious metals that had been obtained at a cost which, reckoned in blood and cruelty, was immeasurable, but which in mere pecuniary outlay of labour, in killing and sacking, was as nothing. It was against the competition of this mass of metals, which pecuniarily cost nothing, that the mine owners had to measure their product in the Roman market; and it is hardly to be wondered that they found the industry unprofitable. The Spaniards subsequently had the same experience in America, and the Californians and Australians are repeating it at the present time.

Hitherto in estimating the loss of life involved in the acquisition of the precious metals by the ancients, the attention of the reader has been confined to those expeditions which were undertaken mainly, if not solely, with this object in view. These expeditions extended over countries so vast or so distant as to preclude the idea of their permanent conquest and colonization. Darius certainly could not have expected to colonize Greece with Persians, nor Alexander, Persia with Greeks. Nor were any systematic attempts made of this character. The subjugated countries were despoiled of their treasures in gold and silver, their fighting men were enlisted as mercenary soldiers or led into slavery, and such as remained were compelled to swear to pay a

¹ Jacob's “Hist. Prec. Metals,” v. i. p. 101.

yearly tribute under threat of a future visitation and spoliation, a payment of which the conquerors never could have been assured, and which the vanquished usually managed to evade after the lapse of a few years, and the growth of a new generation of men.¹

As to the second Punic War and the attitude of the Roman government towards conquered Spain, everything goes to prove that the object of this contest was the acquisition of the mines. The events of the first Punic War, the partial introduction of silver in the monetary system of Rome, the subsequent complete establishment of silver coins in the place of the traditional copper numeraries and the systematic and energetic exploration of the mines that followed the Roman occupation,² are only a portion of the testimony on this head. As to the political designs of Rome with reference to Carthage, these can scarcely be separated from her envy of the latter's monopoly of the Spanish mines and their correlative, the Indian trade, until Cato began his denunciations and Scipio the Younger levelled Carthage to the dust.

The case is somewhat different with the expeditions of Marius, Sylla, Pompey, Paulus Æmilius, and Cæsar, that is to say, until the last named hero went into Gaul. In these wars the Romans had for one of their objects the subjugation and colonization of surrounding countries, their subjection to Roman laws and their incorporation into the Roman Empire. Though for these reasons cost in life of the enormous spoils of gold and silver yielded by these conquests cannot be wholly debited to the precious metals, nevertheless much of it is fairly chargeable to them.³

¹ As Irving says of the Spanish forays in Granada, "It was sack, burn, plunder and away!" "Conquest of Granada."

² See a passage in Martial, on the noise occasioned by the operation of the stamp mills erected in Rome to crush the ore obtained from these mines.

³ "The Romans made very few barren expeditions; and though dominion and glory might be their principal aim, yet it is evident that they had something else in view, or at least that they generally took care

Plutarch informs us that by the conquests of Pompey the revenues of the Roman Empire were raised from 50 to 85 million drachmas, or, say from £1,875,000 to £3,187,500 a year, and that this fact was inscribed upon the face of tablets which were carried in Pompey's triumphs;¹ that his spoil of gold and silver amounted to the value of 20,000 talents, beside what he distributed among the soldiers, of whom the least rewarded received 150 drachmas.

The same author says of Paulus Æmilius, that upon the conquest of Epirus "he sent for ten of the principal inhabitants of each city, and fixed a day for them to bring in whatever silver and gold could be found in their houses and temples. With each of these he sent a centurion and guard of soldiers under pretence of searching for and receiving the precious metals, and as if for this purpose only. But when the day came they rushed upon all the inhabitants² and began to seize and plunder them. Thus in one hour 150,000 persons were made slaves, and seventy cities sacked. Yet from this general ruin and desolation each soldier had no more than 11 drachmas (8s. 3d.) to his share. How shocking was such destruction for the sake of such advantage!"

All doubt about the true character and objects of these wars, and therefore concerning their relation to the history of the precious metals and money, will be dissipated when we come to perceive their striking resemblance to the proceedings of the Spanish conquerors of America; some of whose expeditions, as that of Pizarro, were planned as commercial adventures, and all of them almost openly and avowedly for plunder.

to be paid their expenses. . . . In the age following the last Punic War, several of the Roman generals began to convert to their own use part of the spoils gotten abroad . . . of which number were Marius, Sylla, Pompey, and Caesar. Among these world robbers Lucullus may be reckoned." "The Roman Public Revenues," by Sir Charles D'Avenant. Edit. 1771, vol. iii. pp. 31 and 35.

¹ Plutarch's "Lives" (Pompey).

² Who had probably been previously disarmed.

Plutarch also says of Cæsar's wars in Gaul that reducing the natives to submission was not the object he had in view: that it was for gold and silver and other rich spoils, which he sent to Rome to be distributed among officials and men of influence who could serve his personal ambition; that liberal as his presents were, his promises were greater; that he bribed Paulus the Consul with 1,500 talents (about £300,000 according to the metrologists), that he paid off an immense debt for Curio and thus released Mark Antony, who was Curio's security; and that when he returned to Rome he broke into the public treasury and robbed it of all it contained.¹

In connection with these statements of Plutarch it should be mentioned that Cæsar himself, when after his prætorship (before the expeditions in Gaul) he set out for his government in Spain, *i.e.* of Andalusia, where the mines were,² and Portugal, was in debt to an extent which has been reckoned equal to £2,000,000, evidently a blunder of the metrologists, nevertheless a very large sum.³

Further evidence concerning the nature of the wars in Gaul is derived from the vastness of the spoil accumulated by the conqueror, the gold portion of which was so great as to cause a sudden narrowing of one-fourth in the ratio of gold to silver in Rome, *i.e.* from 11.91 to 8.93.⁴ Gold coin was not yet legal tender in Rome, or this could not have

¹ Plutarch, "Life of Cæsar." Adam, "Rom. Antiq.," gives the sum taken from the treasury at £1,095,979; but it is more precisely rendered by D'Avenant (Works, iii. p. 36), who, quoting from Freculph. Luxoviens, says it consisted of auri pondo 4,136 and argenti pondo 900,000. At the rate of £45 12s. gold and £2 16s. silver to the Roman pound (5,250 gr. troy) this would amount to about £200,000 gold, and £2,500,000 silver.

² And here "he filled his coffers." Plutarch, "Cæsar."

³ His expression was "his millies et quingenties sibi deesse, ut nihil haberet," a sum rendered by the metrologists as equal to £2,018,229. Adam, "Rom. Antiq.," p. 431. Plutarch says that before Cæsar enjoyed any office he owed 1,300 talents, and that Crassus went security for him on this occasion to the extent of 830 talents. Plutarch, "Cæsar."

⁴ Sueton., "Julius Cæsar," ¶ 54. Boeckh, book i. ch. 6.

happened. However, the ratio soon widened again to 11.90.¹

To conceal the cause of this perturbation Cæsar pretended to have obtained a portion of his gold from the diggings at Aquileia, a Roman town at the head of the Adriatic Gulf, where his head-quarters were fixed.

These diggings (there are no gold vein-mines in this part of Italy)² had been opened by the natives before B.C. 186, for at that date the town of Aquileia had been built by the Romans, who about that time went into the diggings and obtained so much gold from them as to cause a fall of one-third in its value.³ That a second exuberant yield and a second fall, this time of one-fourth, in the value of gold should have occurred in Cæsar's time, about B.C. 51, is regarded as extremely improbable. Boeckh and Adams, after Suetonius, both attribute the fall in gold to the plunder from Gaul.⁴

Upon the fruitful theme of Cæsar's wars in Gaul hundreds of modern writers have lavished their imagination and eloquence. In none of them is to be found an intimation that Cæsar's expeditions were merely a series of forays; that he made no permanent conquests, and that his exactions from the conquered were firstly for gold in sight; secondly, for tribute of gold not in sight; and thirdly, for slaves to produce gold either by forced labour or through exchange.

Yet the ancients his contemporaries or immediate successors clearly perceived this fact. Tacitus expressly says

¹ Boeckh, book i. ch. 6. The temporary character of this aberration is also proved by the ratios of the gold aurei and silver denarii coined under Pompey, Cæsar, and Augustus. "Roman Imperial Coins," by Capt. Henry Smythe, R.N., Bedford, 1834.

² There are no gold mines in this part of Italy. Communication from U. S. minister Marsh to Monetary Commission "Report," vol. i. pp. 241, 244, 248.

³ Polybius, xxxiv. p. 10, quoted in Strabo, iv. vi. p. 12.

⁴ Boeckh, "Polit. Econ. Athen.," book i. ch. 6. Adam's "Rom. Antiq.," p. 428. Suetonius, "Cæs.," ¶ 54.

that Britain was *overrun* (euphemism for plundered), not reduced, by Cæsar, and that its reduction was not effected, indeed, not attempted, until the time of Agricola, about A.D. 76.¹ Cæsar's actions in Britain were confined to over-awing the natives, and compelling them to pay tribute; and when these methods failed, he dragged them into slavery. He pursued a similar policy in Gaul and Germany. The valorous character of his achievements may be gathered from the fact that the Romans were clad in steel and armed with swords and engines of war; in all of which respects the natives were deficient, for they were not acquainted with the use of iron.² His followers were more than once afraid of merely the "fierce aspect" of the natives. In short, even though our only account of these expeditions comes from the pen of their leader, they so closely resemble the later ones of Cortes in Mexico, that it is difficult to discover any material difference in their general character and objects.

Dion Cassius asserts in reference to Cæsar's expedition into Britain, that it was of no advantage to the Empire, and in this opinion Plutarch concurs.³

These condemnations, from authors nearly contemporary with the events to which they relate, are probably due to the fact that the money of Britain at that time was "composed of brass or iron rings,"⁴ and therefore that that country could not have repaid the cost of conquest. At a later period, however, tribute in both gold and silver was obtained from Britain by Agricola.⁵ The absence of gold and silver money in that country suggests that this tribute consisted of such rude ornaments as the natives possessed,

¹ Notes to book v. cap. xxi. of Bohn's "Cæsar's Commentaries."

² "Cæsar's Commentaries," v. ch. 12.

³ "Cæsar's Comm.," note by Oberlin, v. ch. 20.

⁴ "Cæsar's Comm.," v. ch. 12.

⁵ Tacitus, quoted in "Cæsar," note, book v. ch. 12. Agricola, in his oration before the battle of the Grampian Hills, clearly discloses the object of the expedition. Said he: "Fert Britannia aurum et argentum et alia metalla pretium victoriæ."

or that it was obtained by condemning them to the mines in the manner afterwards practised by Columbus, Cortes, Pizarro, and the other conquerors of America.

Suetonius assigns as Cæsar's motive for the expedition to Britain that of his wishing to obtain pearls, in which he had heard the island abounded. This in later days was the motive of Vasco Nunez in ravaging the coasts of the Pacific, and of Cortes in the various expeditions he sent to California.

In order to justify himself in the loss of Roman soldiers involved in this conquest, and to prove to the Roman people how rich a country he had conquered, Cæsar sent to the temple of Venus at Rome "a breastplate formed, as he wished it to be believed, of British pearls."¹ From a similar motive, Cortes sent Montezuma's regalia to the King of Spain.

As might be expected, no indication of the real character of Cæsar's expeditions is to be found in his Commentaries upon himself. Gold, silver, and slaves are frequently mentioned in his pages;² but it is nowhere intimated that they formed the object of his conquests. And yet both the opinions of his contemporaries and immediate successors and the general character of the enterprises themselves clearly reveal the fact that plunder, and not political subjugation, was their principal end.

¹ Pliny, ix. ch. 57, as quoted in Bohn's "Cæsar," p. 94.

² Cæsar, pp. 63, 94, 112, 115, 116, 117, 124, 140, 142, 158, 159, 160, 162, 163, 167, 172, 174, 191, 192, 194, 195, 196, 209, and 215 of Bohn's translation.

CHAPTER V.

MINING AND SPOILIATION IN THE MIDDLE AGES.

Mining subsequent to the Roman era—During the Middle Ages the metals were obtained chiefly by plunder—This substantially true of the whole period from the Commonwealth of Rome to the opening of California—Details of mining in the Middle Ages—The rise in prices previous to the discovery of America due to the silver mines of Germany, and the introduction of paper-money—Saracenic Europe—General review of the period—Gradual discontinuance of mining.

IN a chapter on the production of the precious metals, from the period of the dissolution of the Western Empire to the discovery of America, the historian Jacob remarks that, "the precious metals were sought not by exploring the bowels of the earth, but by the more summary process of conquest, tribute, and plunder."¹ Although great diligence in examining the documents of the period has failed to discover more than the faintest traces of mining for the precious metals from the fifth to nearly the close of the eighth centuries, it is probable that the river sands of the Iberian peninsula, and the sands of the Rhine between Strasburg and Phillipsburgh were washed for gold.

The ancient Roman workings in the vein mines of what is now known as Hungary were also probably continued,² though we have no record of this character of a date previous to the latter portion of the seventh century. From the circumstances of the Eastern Empire, and the proximity of its capital to the ores of the Balkan mountains, it is likely that mining for the precious metals was prosecuted on a small scale in what is now known as European Turkey.

¹ Jacob's "History Precious Metals," v. i. p. 235. ² Ibid. v. i. p. 240.

But all of these workings, whatever they may have amounted to, were quite insignificant compared with those which had been conducted during the Roman imperial era. The workings during the succeeding era, presently to be mentioned in detail, though more important, were nevertheless also quite small until the discovery of America, and were confined to the gold washings of the Iberian and north German rivers, and the silver mines of Central Europe.

While this period of limited production continued, the efforts on the part of each nation or great feudatory to obtain supplies of the precious metals, promoted that continual state of warfare, spoliation, and pillage which forms the characteristic feature of the Middle Ages. This is not alleged as the cause of the turbulence of that period; it was either one of several causes, or else a necessary concomitant. It is certain that the increasing scarcity of the precious metals played an important part in shaping the times.

Even after America was discovered, though the supplies of the precious metals to Europe were enormously increased; yet they continued to be obtained less by mining than through "conquest, tribute, and plunder." The remark which Jacob has applied to the Middle Ages may therefore be attached to the entire period, from the Commonwealth of Rome to the opening of California. Free mining was almost unknown. The precious metals were not the product of labour or capital, but the bloody fruits of victory and oppression. Economical maxims, based upon the production of gold and silver, during this period of more than two thousand years, are therefore of little validity.

From this general consideration we now turn to the details of mining during the Middle Ages.

GOLD SANDS OF THE RIVERS - THE TAGUS.—The shores of the estuary of the River Tagus in Portugal consist of three classes of auriferous sands. 1. *Cascalhao*, or gravel sand. 2. *Medão*, or barrier sand, or sand bank above the water's edge. 3. *Malhada*, or furrow sand, resting on clay. These sands were probably worked by the

Phœnicians so early as 1100 B.C., for at this period they washed those of the Guadalquiver less than 200 miles distant. They were probably also worked at a later period by the Carthaginians and Romans; and were certainly worked by the Arabs. The latter were forced to abandon them in A.D. 1147, after which the Portuguese worked them up to about A.D. 1550. During this period of four centuries it is estimated that they yielded £378,000, or about £945 per year. This product was not so small but that the King of Portugal deemed it worth while to claim a royalty of one-half on the best portion of it, besides charging the miners for licences, and compelling them to sell their gold to the Royal Mint at something less than its legal value.

The stoppage of the working from 1550 to the date next to be mentioned, is attributed to the rise in prices occasioned—first, by the general influx of the precious metals from America; second, by the wealth secured through the Portuguese expeditions to India and Japan; and third, by the opening of the rich gold placers of Brazil, about 1670.

In A.D. 1814 the sands of the Tagus were again worked for gold, and this was continued till 1833; since which time they have been abandoned. During this period (less than sixteen years of actual work) the aggregate product was 46,270 milreis, expenses 43,142 milreis—profit 3,128 milreis. The number of men occupied was about twenty, and the daily product of each man about 2*s.* 7*d.* English gold, of which nearly 2*s.* 5*d.* went in royalties, taxes, and other expenses; leaving barely more than 2*d.* a day to recompense the miner.¹

THE GUADALQUIVER, DARRO, AND DOURO were worked with results, doubtless, somewhat similar to those related of the Tagus.

THE RHINE.—The sands of this river, chiefly between Strasburg and Phillipsburg, were worked for gold during the Middle Ages. At one time, the magistrates of Stras-

¹ "Report U.S. Monetary Commission," i. 457-8.

burg farmed out the right to work them. By the year 1718 the washings had become so poor that the share of these magistrates was only four or five ounces per annum. In 1846 the yield was estimated at 36 pounds troy.¹ The washers usually made from 1*s.* 3*d.* to 1*s.* 8*d.* a day, and occasionally gained from 8*s.* to 12*s.*²

Silver during the Middle Ages was produced chiefly in South-eastern Germany.

HUNGARY, TRANSYLVANIA, AND THE BANAT.—The mines of this region are vein or quartz mines. Those now worked may be divided into four groups: the Schemnitz, Nagy-banya, Abrudbanya, and the Banat of Temeswar.

Schemnitz: The most important mines are those of—
Schemnitz: Argentiferous, galena veins, opened about seventh century; closed in 1442; reopened seventeenth century.

Kremnitz: Silver and gold, opened about eighth century.

Neusohl: Argentiferous copper veins, opened about thirteenth century.

Schmölnitz: Argentiferous copper veins.

Nagybanya: The veins of this group lie in a chain of mountains, proceeding from the frontiers of Buckowina, where it unites with the Carpathians, and finally disappears among the sand stones on the northern frontier of Transylvania. This district produces some gold and a smaller quantity of silver.³ Not known when opened.

Abrudbanya: The mines of this district are in the mountains in the western part of Transylvania, and produce gold with some silver. Not known when opened.

Banat: The mines of the Banat chiefly occur in the mountains that enclose the valley of the Danube at Orsova.

Besides the above, mention is made of the gold and

¹ M. Daubrée, in a report to the French Academy of Sciences, "Comptes Rendus," xxii. p. 639, 1846.

² Phillips on Mining, London, 1867, p. 19.

³ Phillips, p. 258.

silver mines of the Farebajer Mountains in Hungary, reopened in fifteenth century, since closed; the gold and silver Salzburg mines in Austria (same vicinity), productive during the fourteenth and sixteenth centuries; the gold and silver mine of Altenburg, Hungary, productive during the fifteenth century; the Schellgadin mine, so rich in silver during the sixteenth century that it was called the "Throne of Plutus;" the Rothansberg Mine, originally worked by the Romans, and reopened during the eighth century; a mine called "El Dorado," near Brixen, in the Tyrol, very productive during the sixteenth century; and numerous unimportant veins.¹ Many of these last-named mines are known to have been, and others are believed to have been, worked by the Romans; they were all reopened during the eighth and ninth centuries, and exhausted between the fifteenth and seventeenth.

SAXONY AND BOHEMIA.—The mines of this region are in the Erzgebirge range, and comprise about 900 veins of silver ores, of which the following were the most important ones among those which were opened so early as the tenth century:—

Freiberg: From 1524 to 1850 this district produced 5,613,228 pounds troy of silver.

Marienberg: Ruined by the Thirty Years' War.

Annaberg: From 1654 to 1845, produced 283,000 pounds of silver.

Schneeberg: From 1320 or 1350, during a period of thirty years, this district produced about 100,000 pounds of silver per annum. (The mine of St. George, in the same district, was opened and exhausted during the fifteenth century, yielding some twenty tons of silver.)

Johann-Georgenstadt: Very little known of this district.

Joachimsthal: Very ancient; now over 2,000 feet deep.

THE HARTZ.—In this region the following are the most important mining districts:—

¹ Jacob.

Andreasberg: Argentiferous lead. The principal mines are the Samson and Neufang, opened in 1520, and now nearly 3,000 feet deep.

Clausthal: The principal mines are the *Dorothea* and *Carolina*. The former produced, from 1700 to 1807, silver to the amount of 553,200 pounds. It is now exhausted. The latter is the principal productive mine at present.

Rammelsberg, near Goslar. Opened in the tenth century (year 968);¹ abandoned between 1344 and 1353; working resumed in 1453, and continued at the present time. It has, therefore, been constantly worked for upwards of 800 years.

THE ALPS.—The principal mining districts of this region are the:—

Isère: In this district are the mines of La Gardette and Allemont. The former was worked from 1700 to 1841, yielding, chiefly during the earlier portion of this period, a small return of gold and silver. The latter yielded a small product of silver from 1768 to 1815.

Tyrol: In this district the mines of Kitzbühel and Röhrerbühel were productive during the seventeenth and eighteenth centuries, and abandoned about 1750.

Hautes Alps: In this district the mines of L'Argentiere were worked by the Romans, and abandoned probably during the commotions which marked the decline of the Empire. They were reopened previous to or during the twelfth century.

BRITAIN.—The mines of this country, all of which are of argentiferous lead, are known to have been worked during the Middle Ages, though with what result cannot be ascertained.

FRANCE.—Many scattered notices of its mines are contained in Jacob's work; they do not appear to have been of importance.

After reviewing the entire range of mining in Europe

¹ The mine of Goslar greatly contributed to enrich the Emperor Otho. Anderson's "Hist. Com.," i. 92.

during the Middle Ages—that is to say, Europe beyond the scope of Saracenic rule—there appears good reason to assent to the conclusion drawn by Anderson, that: “It was the silver mines found in Germany in the tenth and following centuries which gradually increased the quantity of money and the price of necessaries, even before the discovery of America.”¹ It is, however, believed that this statement would be more complete if it included the influence occasioned by the use of bank-credits in the Italian republics, and in Catalonia, Genoa, &c., and the employment of bills of exchange generally throughout maritime Europe.

SARACENIC EUROPE.—During the eighth century the Arabs conquered Spain and the adjacent islands, including Sardinia. Here they captured a considerable quantity of gold and silver, which had recently been produced from the mines of that island;² and it is believed that they continued the working of these mines for a long time afterwards. On the mainland of Spain their explorations for the precious metals were prosecuted with great vigour.

“Old silver mines, thought to be exhausted, were made to yield afresh by skilful working; and the Spanish mines then furnished (to the world) the chief supplies of the precious metals.”³ They exported quicksilver to Constantinople;⁴ probably for use in the silver mines of the Hedjaz (Midian), which they had reopened after their abandonment by the Romans.⁵

Spain is so full of silver veins that after being explored for many centuries new mines have been discovered in recent years, the richest of them all—Huelclacina—having been opened so late as the year 1843.⁶ It is, therefore, quite probable that the Arabs made many new discoveries during the seven or eight centuries whilst they were the masters of the Peninsula. They are believed to

¹ “History of Commerce,” i. 67.

² Cardonne, in Jacob, v. i. p. 266.

³ Yeats’ “History of Commerce,” 89.

⁴ Ibid.

⁵ Captain Burton’s “Land of Midian.”

⁶ Phillips, 263.

have reopened the Roman silver mines in the present French division of the Pyrenean Mountains, and to have worked the gold mine at Lares, the silver mine of Zalamea in Andalusia, and that of Constantina, near Cazalla.¹ Their principal mines were, however, in Jaen. The hills of this district are pierced with more than 5,000 shallow pits, which are estimated to have been the work of five centuries. The character of the work is said to be much inferior to that of the Romans; but this inference is drawn from very meagre and doubtful appearances.² The Arabs also worked the quicksilver mine of Almaden, and perhaps also the silver mine of Guadalcanal.³ They washed the sands of the Douro and the Darro for gold, as well as those of the Guadalquivir and the Tagus, the latter, as previously stated, up to the year 1147.

In many of these mines and washings Christian captives were employed.⁴

What quantities of the precious metals were obtained from these various sources is mere matter of conjecture. There are reasons for believing that the gold obtained was quite inconsiderable, and that by far the main supply was of silver.⁵

SCANDINAVIA.—The mines of Denmark, Sweden, and Norway were not opened until the sixteenth century.

RUSSIA.—Those of Russia (the Ural) had been worked in very ancient times by some unknown people; and were not reopened until the eighteenth century.

Turning from the mining to the spoliation of the precious metals in the Middle Ages, the latter was almost incessant. Outside of Saracenic Spain, Europe was split up into an infinite number of feudatories; and the inhabitants, reduced to the lowest forms of villeinage, were marshalled under nobles whose chief occupation was the pursuit of predatory

¹ Jacob, v. i. pp. 268, 269.

² Ibid. 271.

³ Ibid. v. i. p. 273.

⁴ Ibid. 269.

⁵ "History of Money," chapter xiv., on Saracenic Spain.

^{*} See the present work, chapter ii.

warfare.¹ Under such influences the precious metals amassed upon the continent changed hands in almost every foray. The entire absence of security, and the destruction of commerce which ensued, inland as well as maritime, resulted at length in the almost entire disappearance of gold and silver coins, and the discontinuance of mining ; so that by the tenth century very few works of this character were carried on, except in Spain and South-eastern Germany ; the former being under the prosperous rule of the Saracens, and the latter enjoying such security as was derived from the proximity of the Papal Court, and its patronage of the Holy Roman Empire.²

¹ “ Those countries under a rigid feudal system were divided into various independent and petty sovereignties, all jealous of their neighbours, and frequently embroiled with them. The roads and rivers were insecure, and the protection either to property or persons passing along them, dependent upon the interest, the caprice, or the cupidity of the various princes or nobles who ruled the several minor dominions. In such a state of society the precious metals, which were obtained by the labour of the vassals, might for a time be kept in security within the walls of the castles of noble or princely robbers ; but little of them would circulate in countries where no protection was afforded to intercourse, and where commerce was consequently almost unknown.” Jacob, v. ii. pp. 23, 24.

² For further information concerning the mines of the Middle Ages, consult Jacob's work, chapter x.

CHAPTER VI.

AMERICA.

Objects of the Spanish-American expeditions of discovery and conquest—These were gold, spices, and slaves—The Encomienda system—Motives of Columbus—His exorbitant demands for compensation—Cost of his memorable expedition—Its financial promoters.

ARTHUR HELPS, whose reputation for scholarship stands upon no narrow foundation,¹ has bequeathed to us this epitome of the transactions of which the discovery and occupation of Hispaniola form a part.

“The conquest of America cannot be looked at otherwise than as a great tragedy. . . . If mere destruction of life, the life of men like ourselves, be taken into account, this conquest and its consequences will be found to be one of the greatest transactions in history; for, however we may grieve to hear it, further research only more and more supports the statements of Las Casas, who was wont to estimate the loss of lives by millions, a way of talking which has ever since seemed to imply great exaggeration, but which we must henceforth listen to with respectful attention, if not with complete assent.”²

“It is curious that in the works of a rough soldier of that period (Diego de Vargas Machuca), who merely aimed at giving an account of how Indians should be made war upon, there is a keen perception of what was the real difficulty of the conquest, namely, the division of the spoil.”³

¹ Author of the “Spanish Conquest in America,” “The Claims of Labour,” “Friends in Council,” &c.

² Helps’ “Spanish Conquest,” vol. iii. p. 119, Parker’s ed. 1857.

³ Ibid. p. 116.

This spoil consisted at first of what trinkets or ornaments of gold were found in possession of the natives. These being exhausted, the spoil next came to consist of tributes of gold which the natives were ordered to bring to the Spaniards. From the simple fact that the former possessed but little gold, knew not where to find any more, and as for mining in veins, knew little or nothing of it, these tributes quickly fell away, and the spoil next assumed the shape of the natives themselves, who were seized upon by their conquerors, forced into the mines as slaves, and condemned to a labour so exhausting, that in the course of a few months after being thus condemned they invariably perished."

The division among their conquerors of these human gold-gatherers took the shape of *encomiendas*, or awards of vassals to the Spaniards by the King of Spain or his representatives. Upon this subject Helps continues as follows:—

"It is the remark of one of the most eminent lawyers (and it is from lawyers and priests that most information is to be derived on this all-important part of the history) that all the historians, Gomara, Remesal, Herrera, Torquemada, though treating of political matters, put aside the question of *encomiendas*, that subject, however, being, as the lawyer well observes, the end to which all these political matters were directed."¹

Fortunate for posterity had it been if some ancient Roman critic had pierced beneath the meagre and specious accounts which were prepared of Cæsar's expeditions in Gaul, and enlightened us with regard to their real motives and results, as De Leon has enlightened us with regard to those of his countrymen the Conquistadores of America.

Although these reflections bear in part upon the great Columbus, they are made with no design to dim the lustre of his laurels. At the same time it must be stated, and the plainer the truth is told the better, that neither in the search

¹ "Siendo el fin á que todas se dirigen." Antonio de Leon, "Tratado de Confirmaciones Reales," parte i. cap. 4, Madrid, 1630. Helps, iii. 116.

for a western route to India, nor in the administration of the strange lands he found, was Columbus, or were his patrons in Spain, governed by a mere desire of glory.

Columbus was a Genoese, not a Spaniard, and therefore could hardly have been eager, though he might not have been unwilling for his own sake, to seek reputation for the crown of Spain. He was in some sense an adventurer. His early life had been passed in the slave trade on the coast of Africa,¹ a calling whose object can hardly be reconciled with a passion for renown. The famous project which he submitted to Ferdinand and Isabella was not to discover America, but to reach Cathay, Zipangu, and India, by the west, according to a route which had been laid down for him by Toscanelli.

Had he succeeded in this project, instead of stumbling as he did upon America, the only advantage which he could have brought to Spain or to himself was a commercial one; and this is the only one mentioned in the documents of the period, or entertained by the Crown; all the rest is *ex post facto*. Indeed, renown of discovery could not have formed part of it, for India was already well-known by the East. As for proving the rotundity of the earth, Columbus did not expect to prove it any more positively than Thales had proved it;² nor was it proved in fact until Magellan sailed round the globe in 1522.³

But we shall be better able to determine the motives of the discoverer and the Crown, and their bearing upon the sombre verdict which Helps and others have pronounced

¹ The first negro slaves in Europe since the fall of the Punic and Roman Empires were landed in Portugal A.D. 1442. For details of their number and treatment consult Helps, vol. i. pp. 32, 40, 51, 80, and vol. iv. book xx. chap. v.

² Thales proved the sphericity of the earth, B.C. 636.

³ "America was discovered, not as has been so long falsely pretended, because Columbus predicted another continent, but because he sought by the west a nearer way to the gold mines of Japan and the spice countries in the south-east of Asia." Baron von Humboldt, "Fluctuations of Gold," Berlin, 1838, p. 10.

upon the result of their undertaking, by examining the details of the great Captain's application to the Court of Spain. These details will likewise bring to light the agencies and funds which were employed to further his enterprise, the expectations of profit which were held in view by himself and those who employed and assisted him, and the cost of the expedition. Proceeding from these details to those of the discovery and conquest of America, we may find the means of judging how far these momentous events grew out of the desire of glory, and how far they are attributable to the mere search for gold.¹

After Columbus had obtained from Los Reyes a second hearing in behalf of his project, his suit was dismissed on account of the largeness of the conditions which he asked for. These were, to be made admiral at once, to be appointed viceroy of the countries he should discover (viceroy of Japan, China, and India !), and to have an *eighth* of all the *profits* of the expedition. Subsequently, in the address to Queen Isabella, in behalf of the project of Columbus, written by Luis de Santangel in January, 1492, that functionary estimated the cost of the proposed expedition at a million of

¹ See passage from Aliaco, quoted in Helps, vol. i. p. 88, and the prospects of getting gold, &c., by sailing west to Zipangu (Japan) in a letter of Toscanelli to Columbus, dated June 25th, 1474, and quoted partly in Helps, vol. i. p. 89, and partly in "App. Encyc.," v. 516.

In 1495 Mossen Taine Teener, a Catalonian lapidary of Moorish descent, wrote to Columbus: "So long as your excellency does not find black men you must not look for great discoveries, real treasures, as spices, diamonds and gold." Humboldt, who quotes this passage from a work, entitled "*Sentencias Catolicas del Divo poeta Dante*," published in Barcelona A.D. 1545, explains that it was the ancient geographical fallacy that gold was only to be found in tropical climates. Humboldt, "*Fluctuations of Gold*," p. 4.

"Columbus was entirely devoted to the views of the lapidary Teener. He looked for Zipangu (Japan) which was given out as the (ancient) gold island Chrysé; and while sailing (November 14, 1492) along the coasts of Cuba, which he mistook for a part of the continent of eastern Asia (Cathay), he writes in his Journal: 'from the great heat which I suffer, the country must be rich in gold.'" Humboldt, "*Fluctuations of Gold*," p. 5.

maravedis, or about £865.¹ The stress laid by Columbus upon the prospect of obtaining gold, procured for him the countenance and support of two financiers, without whose aid the expedition would probably never have been undertaken. These were Santangel, who was Receiver of the ecclesiastical revenues of the Crown of Aragon, and Alonzo de Quintanilla, who held a similar position under the Crown of Castille.² From an entry in the accounts of the bishopric of Palencia, it appears that Santangel advanced for the expedition in May, 1492, 1,140,000 maravedis (£1,027), and that the Crown furnished the two caravels.³ The Pinzons, rich men of Palos, subscribed an eighth of the expenses. The source and character of these subscriptions may serve to throw some light upon the motives of the undertaking.

Passing this over, and omitting an account of the Discovery, let us examine the proceedings that followed this great event.

APPENDIX TO CHAPTER VI.

SPANISH COINS, WEIGHTS, AND RATIOS AT THE PERIOD OF THE DISCOVERY.

BEFORE proceeding further, and in order that what follows shall be the more intelligible to the reader, it is deemed necessary to explain briefly the coins and weights used in Spain and Spanish America at the period of the discovery, and the ratio in Spain between gold and silver at and about the same period.

In the absence of that more precise information on the

¹ £865 is the equivalent of one million maravedis at the rate designated by Washington Irving; "Life and Voyages of Columbus," Boln's ed. Appendix, xviii. The sum seems so small as to suggest error. We are informed that it did not include the cost of the vessels, and from other circumstances it probably meant only that portion of expense which the Crown was asked to defray.

² Navarrette.

³ Ibid.

subject which perhaps is to be obtained from Spanish metrological works, none of which are within present reach, recourse has been had to the data incidentally contained in the works of Irving, Prescott, Helps, the reports of Sir Isaac Newton and of Alexander Hamilton, and in Kelly's Cambist.

According to Irving, the coins of Spain current in the reign of Ferdinand and Isabella, were chiefly the real of silver and the castellano of gold; the former weighing 54.623 grains troy, and the latter 71.01 grains. As the castellano is said to have passed for 14.41176 reals, the relation of gold to silver was as 1 to 11.086. We know that this relation was fixed by the royal edicts of 1475 and 1497 at 1 to 10.7. There seems therefore to be lack of precision in Irving's account; probably due to his employment of the copper maravedi as a common denominator for the real and castellano. Passing this over, the equivalents given by Irving and the weights by Kelly are as follows:—

Coins.	Equivalent in other coins.	Weight Troy grains fine.	Value in U. S. silver dolls.	Value in English gold.
1 maravedi (copper)	34 to 1 real	—	\$0.004327	—
1 real (silver)	The standard coin	54.623	.147118	—
1 ducat (gold)	383 maravedis	—	—	9s. 7d.
1 castellano (gold)	490 maravedis	70.01	—	12s. 3d.
The cuento of account was 100 castellanos.				

Weights.	For	Troy grains.
1 Tomine	Silver	9.2460 +
1 Ochava	„	55.4765 +
1 Castellano	Gold	71.0100
1 Onza	Silver	443.8125
1 Marco	Gold or Silver	3550.5000

The mark of silver was coined into 65 reales, and considered to be equivalent to 2210 maravedis.

Helps (iii. 134) mentions the dobla and the sencilla among the Spanish coins of this period. The dobla may

have been of silver or gold. Sencilla probably meant, not a coin, but any small silver change, or base or soft money. The golden peso, or peso of gold, is frequently mentioned by the historians of the conquest. According to Helps (iii. 427), this meant a piece of gold worth no more than a silver dollar, for he values it at 4*s.* 8½*d.* sterling; according to Prescott it meant a piece of gold worth about eleven silver dollars, and this last seems to be correct. It probably weighed as much as the silver piece of eight reals, or say 437 grains troy. The pistole of gold is stated by Putnam¹ to have been worth a double castellano; but according to Sir Isaac Newton its weight was 104 grains pure, and it was therefore worth only about 1½ castellanos, or say 1*s.* 8*d.* gold. There is also a golden real mentioned by the Conquistadores.

The origin of the Dollar is obscure. The etymology of the word appears to be German, though some have deduced it from the *dobla*, one of the first silver pieces coined in America. The synonyms are *thaler*, *daller*, *daalder*, *aslani*, &c. The piece of silver now known in the United States by the name of dollar appears to have been derived, so far as weight is concerned, from the Spanish ounce, and in Spain and her colonies it has passed at various times by the names, *onza de plata*; *piastre*; piece of eight (8 reales); pillar piece of eight; Seville piece of eight; *peso*; *peso duro*; *duro*; *onza*; *dollar*, &c.

Its weight in troy grains of pure silver, so far as can be ascertained from Newton, Irving, Hamilton, and Kelly, has been at various times as follows:—

Period.	Weight.	Authority.
Ferd. & Isab.	436·984	Irving's Columbus, Appendix No. 18.
1497	?	Edict of Medina.
1641	?	Date of change of ratio to 14 for 1.
16 —	386·75	Hamilton's Report, Jan. 28, 1791.

¹ "Encyclopædia of Dates," p. 22.

Period.	Weight.	Authority.
1704	388·5	Postlethwayte, art. Currency.
1717	388·5	Sir Isaac Newton's Report of Sept. 21, 1717.
1730	382·897	Kelly's Cambist.
1761	377·	Hamilton.
1772	374·875	Kelly, i. 320.
1786	374·875	Kelly.
1790 ?	368·	Hamilton.

According to Postlethwayte's "Dictionary of Commerce," articles, "Coin" and "Currency," the Spanish dollar, or Seville piece of eight, contained $388\frac{1}{2}$ grains of pure silver, both in 1704 and 1717.

The ratio of value between gold and silver as established by the mint laws of Spain, so far as the same has been ascertained from the forementioned authorities, and Mr. Cernuschi's recent publications, was, at the dates mentioned, approximatively as follows :—

Year.	Ratio.	Year.	Ratio.	Year.	Ratio.
1475	11·0	1497	10·7	1730	16·0
1480	11·6	1641	14·0	1772	16·0
1483	11·7	16—	16·0	1786	16·4

The subject of the ratio in Spain will be found more fully treated in chapter xxx. of the present work.

CHAPTER VII.

THE SEARCH FOR GOLD IN HISPANIOLA.

Gold the first inquiry of Columbus—Its fatal significance to the natives—Uncovetous character of the latter—Columbus' second voyage—The mines of Cibao—Columbus proposes to ship the natives as slaves to Spain—Objections of the Court—Sufferings of the colonists—Their search for gold—Their disappointment and cruelty—Columbus ships four cargoes of natives to Spain as slaves—He hunts the natives with bloodhounds—Extravagant tribute—Despair of the natives—Columbus reduces them all to vassalage—Their rapid exhaustion and extinction.

NO sooner had Columbus taken formal possession of the island of Hispaniola than he asked the wondering natives for gold. This fatal word, so fraught with misfortune to the aborigines that it might fittingly furnish an epitaph for their race, and so tainted with dishonour to their conquerors that four centuries of time have not sufficed to remove its stigma, seems to have been literally the first verbal communication from the Old World to the New.

Some of the islanders had a few gold ornaments about them. "Poor wretches, if they had possessed the slightest gift of prophecy, they would have thrown these baubles into the deepest sea!"¹ They pointed south, and answered, "Cubanacan," meaning the middle of Cuba.

Shortly after the discovery, Columbus was wrecked on the coast of Cuba, and he sent to the neighbouring cacique, Guacanagari, to inform him of his misfortune. The good chief was moved to tears by the sad accident, and with the labour of his people lightened the wrecked vessel, removed the effects to a place of safety, stationed guards around them for their better security, and then offered Columbus all of

¹ Helps, vol. i. p. 122.

his own property to make good any loss which the latter had sustained.

Touched by this unparalleled kindness, Columbus thus expressed himself of these Indios:—"They are a loving uncovetous people, so docile in all things that, I assure your Highnesses, I believe in all the world there is not a better people or a better country; they love their neighbours as themselves, and they have the sweetest way of talking in the world, and always with a smile."¹

In return for their hospitality and lovingkindness, the Spanish captain resolved to establish a colony among them, having found such goodwill and such signs of gold.² He built a fort, called it La Navidad, left forty adventurers in it,³ among them an Irishman and an Englishman,⁴ and sailed to Spain.

The first thing done, after his return home—the recital of his wondrous story, his reception at the Court of Spain, and the Te Deum—was to obtain a grant of the newly-found domain and all its contents, animate and inanimate, from the Pope of Rome. These objects were effected by a Bull, dated May, 1499.⁵

In September, 1493, Columbus set forth again, this time with seventeen vessels and 1,500 men.

He found La Navidad destroyed, and his forty colonists missing. According to the cacique, Guacanagari, the Spaniards had made a raid, probably for gold, upon a tribe of the interior, and notwithstanding the advantages of their arms, had been defeated and killed to a man. Columbus

¹ Navarrette.

² Herrera.

³ A large portion of those who formed the *personnel* of the earlier expeditions to America, both commanders and subordinates, were soldiers or camp-followers, many of them foreign mercenaries who had seen service in Spain, Barbary, Italy, &c.

⁴ Navarrette.

⁵ For remarks on this Bull, see Humboldt's "Critiques on American History," and Prescott's "Ferdinand and Isabella." On the Bull of 1497, see MacCulloch's "Commercial Dictionary," article "East India Company."

built another fort in another part of the island, called it Isabella, and at once gave his attention to the subject of gold.

"Hearing of the mines of Cibao, he sent to reconnoitre them; and the Indios, little foreseeing what was to come of it, gave gold to the Spanish messengers. Columbus accordingly resolved to found a colony at Cibao."¹

In January, 1494, Columbus sent to the joint sovereigns of Spain, by the hands of Antonio de Torres, the Receiver of the colony, an account of his second voyage, with recommendations for the consideration and approval of Los Reyes.

After the complimentary address, it begins with the reasons why the admiral had not been able to send home more gold. His people have been ill; it was necessary to keep guard, &c. "*He has done well*" is written in the margin by order of Los Reyes.

He suggests the building of a fortress near the place where gold can be got. Their Highnesses approve: "*this is well, and so it must be done.*"

He then suggests to make slaves of the Indios, and to ship some of them to Spain, to help pay for the expenses of the expedition.² The answer to this atrocious project is evasive, as though Los Reyes did not wish to wound so valued a servant by a point blank refusal. It is: "*suspended for the present.*"

Money was very welcome at the Spanish Court, where there was more show than maravedis; but Los Reyes were not yet prepared to obtain it by sanctioning the enslavement of an innocent and friendly people. On the other hand, Columbus was eager for the measure.³

¹ "Helps, vol. i. p. 132.

² "Las cuales cosas se les podrian pagar en esclavos de estos canibales." Navarrette.

³ Helps, vol. i. p. 136. On p. 82 he remarks that in entering upon the mournful annals of slavery, he does so somewhat to the shame of the great captain and discoverer. Columbus, whose career as an

While de Torres was at the Court with these recommendations, Columbus's colony fared badly on the island. The provisions which they had brought with them failed, and white men were threatened with starvation, where the Indios lived without effort. To their great disgust the Spaniards had to go to work, and till the earth for bread, instead of scouring it, as they had expected, for gold.

"The rage and vexation of these men, many of whom had come out with the notion of finding gold ready for them on the sea shore, may be imagined. . . . The colonists, however, were somewhat cheered, after a time, by hearing of gold mines, and seeing specimens of ore brought from thence; and the admiral went himself, and founded the fort of St. Thomas, in the mining district of Cibao."¹

It is needless to say that, without the establishment of any permanent sources of supplies, the gold hunters failed in their enterprise, and most of them lost their lives. "They went straggling over the country; they consumed the provisions of the poor Indians, astonishing them by their voracious appetites; waste, rapine, injury, and insult followed in their steps."²

Worn out with their sufferings, the miserable Indios "passed from terror to despair,"³ and threatened the Spanish settlement. Columbus sallies forth, routs the Indios of Macorix, and captures the majority, four shiploads of whom he sends to Spain, February 24, 1495, as slaves.⁴ These were the very ships that brought out the evasive reply of Los Reyes to Columbus's request for leave to enslave the natives.

After this, Columbus starts upon another expedition, at

African slave captain throws much doubt upon his piety, found a religious apology, which it seems was demanded in his days, for obtaining gold by massacre and slavery. He ascribed a moral and religious value to gold, saying "because whoever possesses it obtains what he will in this world, nay, even by the payment of masses brings many souls into paradise." Humboldt, "Fluctuations of Gold," pp. 4, 5.

¹ Helps, vol. i. p. 137.

² Ibid. p. 140.

³ Muñoz, lib. 5, sec. 25.

⁴ Helps, vol. i. p. 141.

the head of 400 cavalry, clad in steel, armed with arquebuses, and attended by bloodhounds. He is opposed by 100,000 Indios. Their soft and naked bodies not being proof against horses, fire-arms, or ferocious dogs, a horrible carnage ensues, and another bloody instalment is paid towards the cost of gold. Columbus captures the cacique, Caonabó, through the vilest treachery,¹ and imposes a tribute of gold upon the entire population of Hispaniola.

The tribute is as follows:—Every Indio above fourteen years old, who was in the provinces of the mines, or near to these provinces, was to pay every three months a little bell-full of gold; and all other Indios an arroba of cotton.²

When this unreasonable tribute was imposed, Guarionéx, cacique of the Vega Real, said that his people did not know where to find the gold, and offered in its place to cultivate a huge farm, fifty-five leagues long, covering the whole island, and to produce therefrom enough corn to feed the whole of Castile. Poor Indio! This was, indeed, a suggestion of despair. Hispaniola, at the utmost, did not contain more than 1,200,000 Indios, man, woman, and child.³ Castile contained a population of 3,000,000 or 4,000,000. An attempt to feed a population so large by one so small, and at a distance of 4,000 miles, could only have ended in failure. But Guarionéx might as well have made this as any other proposal. What their Catholic Majesties wanted was not bread but gold;⁴ and this is what, in their names, Columbus was bent upon obtaining. Yet however much he desired it, the gold could not be collected, simply because there were no gold mines of any consequence, only some poor washings, in Hispaniola, from whence it might be got. Columbus was, therefore, obliged to change the nature of

¹ Las Casas, lib. i. cap. 102. Helps, vol. i. p. 144.

² Helps, vol. i. p. 145.

³ Las Casas; Helps, vol. i. p. 229. But see also Helps, iii. 108 *n*.

⁴ "Pero como el Almirante era forastero, solo y desfavorecido de los ministros de los Reyes Catolicos, y como prudente conocia, que lo que le avia de conservar, eran las riquezas que embiasse davase priesa por el oro." Herrera, dec. i. lib. 2, cap. 17.

his oppressions. This was done by reducing the whole native population to vassalage; and thus, in the year of our Lord 1496, was begun the system of *repartimientos* in America.¹

This was the reward for the unparalleled kindness of the good Guacanagari, and for his loving, uncovetous people, "who always spoke with a smile."

Reduced to a condition of vassalage, infinitely worse than slavery, the Indios fell into the profoundest sadness, and bethought themselves of the desperate remedy of attempting to starve out their masters by refusing to sow or plant anything. The scheme reacted upon themselves. The Spaniards did, indeed, suffer from famine; but power exercised in the cruelest manner enabled them to elude the fate which had been intended for them; whilst the Indios died in great numbers of hunger, sickness, and misery.²

¹ The repartimiento, afterwards the encomienda, was derived from the feudal tenures of Spain. It was a grant of Indios (not including land) to render fixed tribute or personal services, or both, during the life of the encomiendero or suzerain. This was afterwards extended to two, three, four, five, and six lives, and was greatly abused. Consult Irving's "Conquest of Granada," and Helps, vol. i. pp. 145, 164, 173, 197, 198, and iv. p. 353 *et seq.*

² Helps, vol. i. p. 149.

CHAPTER VIII.

THE WHITE MAN'S GOD.

Story of the cacique Hatuey—The golden calf—Cruelty of Ovando—Death of Queen Isabella—Her terrible legacy to Ferdinand—Columbus dies in poverty and debt—Forty thousand natives dragged from the Bahamas and condemned to the mines—Horrors of the voyage—Character of the gold-seekers—Not peculiar to Spaniards, but common to all men under similar circumstances—Cruelty of the ancients—Of the modern English and other races.

IN the early part of 1496, Columbus discovered a gold mine in the south-eastern part of Hispaniola. On his return to Spain in the same year he sent out orders to his brother Bartholomew to build a fort there. This was done and the place called San Domingo. From this port Bartholomew sailed out to Xaragua (east of the modern Port-au-Prince), the only unconquered portion of the island, reduced it to vassalage and demanded tribute in gold. The cacique Bohechio pleaded that there was no gold in his dominions, and the tribute had to be commuted in cotton and cassababread. Returning to Fort Isabella, Bartholomew found that 300 of his followers had died from hunger and disease, the first considerable instalment of the myriads of Spaniards who subsequently perished in the same criminal search for the precious metals.

In 1498 Columbus again set forth from Spain—this time with eight ships and about 900 men. Upon his arrival at San Domingo he sent five of these ships to Spain laden with 600 slaves.¹

The Court of Spain, at first conditionally, as though it

¹ Helps, vol. i. p. 162.

hesitated to thwart its favourite commanders, afterwards absolutely, when it found that none of them were above the practice, and that all evaded the conditions, disapproved of enslaving the Indios. Its objection to this transaction of Columbus was that the captives were not taken in war, and it marked the severity of its displeasure by superseding Columbus in his command and ordering him home.

The officer chosen to replace him was Ovando. In the instructions given to this knight A.D. 1501, he was ordered to treat the Indios justly, and pay them one golden peso a year¹ for their labour in getting gold. Between subjecting themselves to these conditions and living in a state of slavery, there could have been to the Indios but little choice, even if it had been accorded to them. It is due to the Spanish Crown to say that deceived by the reports of the always over-sanguine gold-hunters, it supposed that gold was easy of acquisition in the Indies, and that a moderate amount of involuntary labour on the part of the natives would suffice to produce what was demanded of them.

Ovando left Spain in 1502 with a score or more vessels, and 2500 persons. As these vessels neared the shore of San Domingo, the colonists ran down to hear the news from home, and, in return, to narrate that a lump of gold of extraordinary size had recently been obtained on the island.² Nothing more clearly reveals the character of these expeditions and the persons who composed them, than a brief relation of the fatal consequences of this announcement. Ovando's people no sooner landed than they ran off to the placers, where, in a short time, more than 1,000 of the 2,500 perished miserably from hunger and disease.³

“Here it may be noticed that in general, those colonists who devoted themselves to mining, remained poor; while

¹ Helps, vol. i. p. 262.

² Ibid. p. 188. It had been picked up by a native woman and was estimated to have been worth 1,350,000 maravedis.

³ Ibid. p. 189.

the farmers grew rich. When melting time came, which was at stated intervals of eight months, it often happened that after the king's dues were paid, and those who had claims upon the produce for advances already made to the miners, were satisfied, nothing remained for the miner himself. *And so all this blood and toil were not paid for, even in money*; and many still continued to eat their meals from the same wooden platters they had been accustomed to in the old country; only with discontented minds and souls beginning to be imbruted with cruelty."¹

At this juncture, Columbus, authorized to make further explorations in the New World, suddenly appeared at San Domingo. The orders of the Crown forbade him to disembark at the island for fear that the course of administration for which he had been rebuked would be persisted in; but a violent hurricane was apprehended, and the safety of his fleet afforded him sufficient excuse to seek a harbour. In this storm, which took place as the admiral had foreseen, the greater part of a large fleet of vessels which had recently set sail for Spain were lost, with all on board—another sacrifice to the thirst for gold.

Shortly after this, a force of 400 men was sent to reduce the Indios of the province of Higüey. These unfortunates were hunted with firearms and bloodhounds. Of the captives taken, those not wanted as slaves had both their hands cut off, many were thrown to the dogs, and several thousand put to the sword.²

Ovando, finding that, under the merciful instructions of Los Reyes, about dealing with the Indios, he could get no gold—for they shunned the Spaniards "as the sparrow the hawk" and fled to the woods, there to avoid them and die—transmitted to the Court a report to this effect. In a reply dated December 1503, Ovando was directed "to compel" the Indios to have dealings with the Spaniards; and thus the slave system begun by Columbus, was re-established by the Court.

¹ Helps, vol. i. p. 190.

² Ibid. p. 194.

It may not be uninteresting in this place to hear what the Indios themselves thought about the conquest of America and the motives which impelled the Spaniards in its prosecution. Something of this is embodied in the story of Hatuey, cacique of a province of Cuba.

Apprehensive that the Spaniards would come, as they afterwards did come, to his territory, Hatuey called his people together and recounting the cruelties of the white men, said they did all these things for a great Lord whom they loved much. This Lord he would show them. Accordingly he produced a small basket filled with gold. "Here is the Lord whom they serve and after whom they go; and, as you have heard, already they are longing to pass over to this place, *not pretending more than to seek this Lord*; wherefore let us make to him here a festival and dances, so that when they come he may tell them to do us no harm."¹

The Indios approved this counsel, and to propitiate the god whom they thought their enemies worshipped, they danced around it until they were exhausted; when the cacique turned to them and said that they should not keep the God of the Christians anywhere, for were it even in their entrails it would be torn out; but that they should throw it in the river that the Christians might not know where it was, "and there," says the account "they threw it."

In 1503, Ovando set out with 70 horsemen and 300 foot-soldiers to visit the friendly Queen Anacaona of Xaragua, who hospitably received him with feasting and rejoicing. In return, Ovando, whose object was to terrify the unhappy natives into submision and slavery, invited the chiefs to a mock tournament, where, at a signal from himself, the queen and her caciques were all treacherously captured, the former was put to death by hanging and the latter were burnt alive.

Shortly afterwards, in an expedition against the Indios of

¹ Herrera, quoted in Helps, vol. i. p. 199.

the province of Higüey, the Spaniards cut off the hands of their captives, hanged thirteen of them "in honour and reverence of Christ our Lord, and his twelve Apostles," and used the hanging bodies of their miserable victims as dumb figures to try their swords upon.¹ At another time, the Indios were burnt alive in a sort of wooden cradle.²

Queen Isabella of Spain died in November, 1504. Could she with her dying eyes have seen into the Far West, she would have "beheld the Indian labouring at the mine under cruel buffetings, his family neglected, perishing, or enslaved; she would have marked him on his return, after eight months of dire toil, enter a place which knew him not, or a household that could only sorrow over the gaunt creature who had returned to them, and mingle their sorrows with his; or, still more sad, she would have seen Indians who had been brought from far distant homes, linger at the mines, too hopeless or too careless to return."³

Isabella's will contained a bequest which unfortunately removed all restraint from the oppressions visited upon the Indios. She left to her widower, the Regent Ferdinand, one half of the revenues of the Indies as a life estate. In the methods which were resorted to for the collection of these revenues, this meant one half of the gold which could be extorted by the sweat and blood of the Indios, and Ferdinand, needy and thus endowed, withheld no licence to the adventurers in America, which they alleged was needful in order to swell the fifths due to the Crown, and the importance of the Queen's legacy.

Upon the death of Isabella, Ferdinand, not being the immediate heir to the crown of Spain, retired to his kingdom of Naples, and was succeeded in the government of Spain by King Philip. This monarch died in 1506, and Ferdinand

¹ Helps, vol. i. pp. 209-10.

² "Todo esto yo lo vide con mis ojos corporales mortales." All this I saw with my own corporeal mortal eyes. Las Casas, quoted in Helps, i. 210.

³ Helps, i. 214.

then became King of Spain. A few months before this, Columbus had died, and, as we shall see of all of the Conquistadores, in poverty and debt.

At this period the Indios had become "a sort of money," which was granted in repartimiento to favourites at the Spanish court.¹ "The mania for gold-finding was now probably at its height, and the sacrifice of Indian life proportionately great."² So few of the Indios remained alive that negro slaves began to be imported from Africa to fill their places at the mines.³

The king was told that the Bahama Islands were full of Indios who might be transported to Hispaniola in order that "they might assist in getting gold, and the king be much served."⁴ Ferdinand, who was fully as mindful of his interests as the adventurers upon the islands, gave the required licence, and the evil work commenced. In five years forty thousand of the Bahamians, captured under every circumstance of treachery and cruelty, were transported across the sea, all of them to die lingering deaths at the gold mines.⁵

This was among the last acts of the Ovando administration, which closed with the appointment of Diego Columbus in 1509. But seventeen years had elapsed since the discovery of the island. The amount of gold obtained was scarcely more than £1,000,000.⁶ The cost of its production was several expensive expeditions with their outfits, some thousands of Spanish lives, and at least a million and a half of Indios!⁷

Such was the cruelty of the gold-hunters, and the terror

¹ Helps, vol. i. p. 222.

² Ibid. p. 222.

³ Ibid. p. 220.

⁴ Ibid. p. 224.

⁵ Ibid. p. 225.

⁶ "From 1492 to 1500 the entire importation of gold from the then discovered regions of the new world scarcely afforded a yearly average of 2,000 marks." Humboldt, "Fluctuations of Gold," p. 11. At the rate of £30 12s. to the mark this would amount to £61,200 gold, and for seventeen years to a little more than one million sterling.

⁷ Las Casas, as quoted on p. 56, *ante*. In 1519 there were but two thousand natives left. Helps, vol. iii. p. 108.

they inspired in the natives, that when Drake captured San Domingo in 1586, he learned from the few survivors of what had once been a populous country that, rather than become the fathers of children who might be subjected to the treatment which they had endured, they had unanimously refrained from conjugal intercourse.¹

It must not be supposed that these atrocities were peculiar to the Spaniards: rather was it peculiar to the class of adventurers to be found in all countries who, in the hope of rapidly and easily acquired fortunes, coupled with the fascination of a career of adventure, licence, and rapine, are the first to brave the dangers and seek the profits of a miner's life. Similar cruelties have been related of the ancients, who were not Spaniards. Similar ones can also be told of the Portuguese, the English, the French, as well as the Americans.² They are narrated here of the Spaniards simply because these instances are connected with the greatest supply of the precious metals known to history.

"I swear that numbers of men have gone to the Indies who did not deserve water from God or man," wrote Columbus to the home government,³ and it was the same with those who went from other countries than Spain.

The vilest scoundrels in Europe were let loose upon the unoffending aborigines of America, and the darkest and most detestable crimes were committed in the sacred names of God and the Trinity.⁴

To these cruelties the necessities of the Crown opened the door. A letter of King Ferdinand to the colonists of Hispaniola is thus fairly paraphrased: "Get gold: humanely if you can; but at all hazards get gold; and here are facilities for you."⁵

¹ Raynal's "Hist. East and West Indies," ii. 445.

² See Appendix to this chapter.

³ Navarrette, vol. i. p. 271. Also Helps, vol. ii. p. 35.

⁴ Helps, vol. i. p. 161; vol. ii. p. 201.

⁵ Helps, vol. i. p. 241. This letter is dated July 25, 1511.

APPENDIX TO CHAPTER VIII.

CRUELTY OF EUROPEANS.

Massacre of the Muskingum—Cruelties of the British in Australia.

“IN March, 1782, about one hundred and sixty militia men living upon the Monongahela set off on horseback to the Muskingum, in order to destroy three Moravian Indian settlements. Coming nigh to one of these towns they discovered Indians on both sides of the river. The assailants divided themselves into two parties, one of which crossed the river, and seeing an Indian coming towards them, they fired upon him, breaking his arm. His telling them that he was the son of a white Christian man did not save him from a death by their tomahawks. The other Indians were made prisoners; they informed their captors that they were Christians, and offered no resistance. They were told that they must go as prisoners to Pittsburg, at which they seemed much rejoiced. They gave up all their property, even pointing out where some of it was concealed for safe-keeping.

“In the evening a council was held, when the commander of the expedition, David Williamson, told his men that he would leave it to them, either to carry the Indians as prisoners to Pittsburg, or to kill them. A majority agreed that they should be killed. The minority, some sixteen or eighteen in number, who were of a different opinion, wrung their hands, calling God to witness that they were innocent of the blood of these harmless Christian people. Of the savage resolution concerning them, notice was given to the Indians by two messengers, telling them that as they said they were Christians they should have time that night to prepare themselves to die. Whereupon the women and children met together and sang hymns and psalms all night, as did also the men; and they continued thus singing as long as there were three alive.

"In the morning, March the 8th, the participants in the massacre chose two houses (one for the women and children, the other for the men) which they called slaughter-houses, into which they dragged their victims, two and three at a time, with ropes about their necks, and felled them to the ground. One person, with a cooper's mallet, killed fourteen. The two buildings were then fired, as were all the other houses. Of ninety-six persons who patiently met this cruel death, sixty-two were men and women, and thirty-four were children. This done, the party visited the other towns, fired the houses, took their plunder, and returned to the Monongahela, where they kept a vendue among themselves. About eighty horses fell into their hands, which they loaded with the plunder, the greater part furs and skins. There can be no doubt that this raid was instigated solely by the hope of spoil, and the lust for it excited by the success of a military expedition in the preceding spring, under Colonel Brodhead, against the hostile Indians. On that occasion the plunder brought in by the troops sold for about £80,000 at Fort Henry."—"Contributions to American History," Phila. Lippincott, 1858, p. 143.

Says a writer on the English colony of New South Wales and the conduct of the English settlers towards the aborigines, "They have been wantonly butchered; and some of the Christian whites consider it a *pastime* to go out and shoot them. I questioned a person (a mechanic) from Port Stephens. . . . His answer was, 'Oh, we used to shoot them like fun!'"—Breton, p. 200, quoted in Whately's "Bacon's Essays."¹

¹ Nova Scotia was discovered by Cabot, a Portuguese under a commission from Henry VIII. of England. In 1578 Elizabeth granted the province to Sir Humphrey Gilbert, stipulating for a royalty of one-fifth of all the gold and silver that the grantee might find. The ancient cavities on the sea shore of Nova Scotia, near Lunenburg, called the Ovens, prove that the search for gold was prosecuted as zealously by the English as the Spanish, nor can it be doubted, with any more respect for the lives of the subjugated natives. "Gold Fields of Nova Scotia," Halifax, 1868, pp. 20, 43, *et seq.*

CHAPTER IX.

DARIEN.

Ojeda and Nicuesa summon the Indios to supply gold—Unable to do so they are tortured, robbed, and enslaved—Miserable end of the Spaniards—Cruelties of Vasco Nunez de Balbao—Discovery of the Pacific Ocean—Religion and plunder—The Pearl islands—Gold fishery—Indios thrown to the dogs—Frightful mortality of the natives—Cruelties of Ayora—The bloodhounds' share of spoil.

LET us now transfer the scene to the Isthmus of Darien. This country had been discovered by Columbus in 1502. In 1509 Ojeda was appointed governor. In that year this adventurer sailed from San Domingo with two ships, two brigantines, 300 men and twelve horses; his object being to found a colony at Darien, and prosecute the search for gold. He failed in the enterprise, and was supplanted by one Enciso, who, with another expedition, arrived at Darien in 1510. The Indios, as usual, received the white men kindly. Being asked for gold—always the first demand of the “heaven descended” strangers—they gave up all they had, which of course was not much, seeing that they had none in use as money, no diggings of any account wherefrom to obtain more, and no knowledge of mining. The white men then asked them for more gold. Being unable to comply, their cacique was tortured and their town captured and pillaged. Some golden trinkets found among their simple effects furnished a presumption that they knew whence to obtain more of the coveted metal. This cruel suspicion sealed their fate;¹ many of them were tortured and foully put to death; but with little avail to

¹ Helps, vol. i. p. 317.

their masters, for no more gold was obtained. Enciso's government proving as unsuccessful as Ojeda's (probably for the same reason: his failure to get gold), he was supplanted by Nicuesa, who also failed, and the latter was followed by Vasco Nunez de Balbao.

Meanwhile Ojeda died in poverty, and Nicuesa perished in a desert. Of several hundred gold-seekers only seventy odd remained.¹

The first move of Vasco Nunez after his arrival at Darien was to send seven men to the province of Cueva, to search for gold.² A wretch named Juan Alonso, who a year and a half before had found refuge and relief from starvation among the compassionate and forgiving Indios, now delivered his benefactors over to Vasco Nunez, who, with 130 armed men, had entered their territory.

Vasco Nunez pillaged their town, devastated their country, and dragged their cacique to Darien, there to be used, poor simpleton, as an instrument to point the way to other native settlements where gold might be captured.

Some of these settlements were in the province of Comegra. Entering this province and treating it like the rest, the Spaniards obtained in all 4,000 pesos of gold, which seemed so great a prize—they thought not of the thousands of lives which they had cruelly sacrificed to obtain it—that forthwith they quarrelled amongst themselves over its division. Observing this, the cacique Comogre's son dashed the gold disdainfully to the ground, and told the Spaniards that if that was the object of their expeditions, and their cruel treatment of the Indios, he could show them where "they could get their bellies full of it." The land he spoke of was six suns' journey to the southward. He meant Peru.

Either supposing that Comogre's son wished to save his people by leading the Spaniards so far away from their fort and supplies as to endanger their safety, or being unwilling

¹ Helps, vol. i. p. 334.

² Ibid. p. 339.

to hazard so long a journey, the latter failed to act upon this suggestion. Upon one of them, however, the statement of Comogre's son made a deep impression, and led to the most extraordinary and important results. This man's name was Francisco Pizarro, who at that time was one of the adventurers in Vasco Nunez's band.

Vasco Nunez returned to Darien, whence he sallied forth at intervals to pillage the country. His plan of operations was to put the Indios to the torture, make them reveal the villages where there was any gold, and at night to attack these villages, in order to secure the coveted prize. He hanged thirty caciques, destroyed a vast number of lives and devastated the valleys of the Isthmus in every direction. Everywhere he sought for gold, asked for gold, tortured for gold and murdered for gold.¹

Up to 1512 he had secured but 75,000 pesos; for in that year the king's fifth for the whole period of the occupation was remitted to Spain, and this amounted to only 15,000 pesos.²

Not only did the Spaniards maltreat the Indios, and quarrel among themselves about the spoil, they even mutinied against their leaders.

In 1513 "they accused their commander of unfairness in this division, and as there was a sum of 10,000 castellanos just about to be divided, this was the cause, or they made it the pretext, of their intention to seize upon him."³ Vasco Nunez escaped this danger only by relinquishing his share of the booty.

In this same year reinforcements were received from Spain of two more ships and 250 men, whereupon Vasco Nunez started with 190 of the latter to cross the mountains, hunt for more gold, and perhaps reach the South Sea, of whose existence the Indios had apprized him. Rambling through the humid defiles of the Isthmus, he comes upon many new settlements, destroys a great many lives, on one

¹ Helps, vol. i. pp. 348, 349, 350, 351, 352, 353, 354.

² Ibid. p. 347.

³ Ibid. p. 355.

occasion no less than 600,¹ and captures a gratifying amount of golden trinkets.² The scenes upon this journey remind eye-witnesses of the shambles.³

On September 25th he beholds the Pacific Ocean from the summit of the mountains, lifts up his hands steeped in innocent blood to return thanks for this famous discovery, reminds his hearers of the gold which Comogre's son had advised them was to be found beyond this sea, and promises to lead them to this treasure.⁴

He then descends the Sierras, kills a few hundred Indios and gets 400 pesos more of gold.⁵ Hearing of a temple full of gold in the caciquedom of Dabaybe, he proceeds thither and pillages it.⁶ He conquers Coquera and demands gold; he declares the object of his expedition to be gold, to enable the kings of Castile to propagate the true faith. A *veedor* attends every expedition to secure the king's fifth of the gold.⁷ He conquers Tumaco, who yields to him not only gold, but also pearls. He writes to the king of the riches of Peru, of which he now hears again from Tumaco; and prepares to return to Darien with many gold-hunting projects in his cruel mind.

The simple caciques shed tears at his departure.⁸ On his way he captures the cacique Paera, whom he throws to his dogs to be torn in pieces. He captures the cacique Tubanamá, whom he threatens with death if he does not procure gold, and releases on the payment of 6,000 pesos; all the poor wretch could find in his petty dominions. Vasco himself then questions him as to the origin of this gold. Trying the gravel of the streams he finds it to be auriferous, and orders Tubanamá to collect more gold on pain of death. He then departs for Darien (this is in 1514) and reaches the port, where he finds two more ships from Spain, awaiting his orders.⁹ In his letter to the king, accompanied by rich presents, Vasco Nunez states that he

¹ Helps, vol. i. p. 359.

² Ibid. p. 358.

³ Ibid. p. 359.

⁴ Ibid. p. 361.

⁵ Ibid. p. 363.

⁶ Ibid. p. 348.

⁷ Ibid. pp. 344 and 364.

⁸ Ibid. p. 367.

⁹ Ibid. p. 371.

has not lost a man in this expedition.¹ He asks for more men in order to penetrate a country of the Indios near the South Sea, where gold can be got by fishing for it with nets;² and the king responds to this exciting intelligence by sending out an imposing expedition.

This consists of a new governor (Pedrarias), a new *veedor* (Oviedo, the subsequent historian), twelve or fifteen vessels,³ and 1,500 men,⁴ amongst them "not a small number of avaricious old men,"⁵ who were anxious to take part in the gold-fishery; besides several nobles and priests. The latter were furnished with a Royal Proclamation, addressed to the Indios, claiming their lands, gold and services as vassals, and as the property of the Pope and the king. This proclamation was to be read to the Indios on all occasions before giving them battle.⁶ The Spaniards used to read it to themselves and the trees, as they marched in ambush upon the devoted natives.⁷

This new expedition arrived at Darien in 1514, where-upon Vasco Nunez turned over the government to Pedrarias, giving him at the same time an account of the land and his own administration. The native population numbered two millions;⁸ the mountains and streams contained gold, and pearls were to be found at the Rich Isle, a rock in the Bay of Panama. Vasco Nunez also reported that his force consisted of 450 men.⁹

Expeditions were at once prepared by Pedrarias to again pillage the adjacent countries; but before they could set forth the scething and humid climate of the Isthmus, coupled with a lack of provisions adequate for so great a number of

¹ Helps, vol. i. p. 372.

² Ibid. p. 373.

³ Ibid. p. 385.

⁴ Ibid. p. 374.

⁵ Ibid. p. 375.

⁶ The original of this pompous and absurd document is printed in Helps, vol. i. p. 379.

⁷ "Entre si leian el Requerimiento á los árboles." Helps, vol. i. p. 405.

⁸ Helps, vol. i. p. 391. "Appleton's Encyc.," Art. "Panama," says 300,000, but this can only mean the immediate district of Panama.

⁹ Helps, vol. i. p. 389.

persons as were under his command, combined to very nearly destroy the whole party. In less than a month 700 Spaniards perished from hunger,¹ and contributed another quota of lives towards the disastrous search for gold.

“Men clad in silks and brocades absolutely perished of hunger, and might be seen feeding like cattle upon herbage. One of the principal hidalgos went through the streets, saying that he was perishing of hunger, and in sight of the whole town, dropt down dead.”² The condition of despair and ferocity to which these gold-hunters were now reduced may be easily imagined. They were ready for any cruelty.³

An expedition was sent along the coast, under “Juan de Ayora with 400 men in a ship and three caravels, to get gold,”⁴ and provisions. The friendly caciques Comogre, Poncha, and Pocorosa “came with their gold to this new Spanish chief; but their people were harassed and made slaves, and their wives were carried off.”⁵ The same cruel and piratical acts were visited upon the hapless Tubanamá.

The licentiate Zuazo thus describes Ayora’s method of dealing with one of the caciques, whom Vasco Nunez had previously terrified into the condition called “friendly.” The Indies received Ayora with hospitality, providing roast beef, game, bread and wine, no small evidences of civilization. After dinner Ayora sent for his host, the cacique, and ordered him to bring gold, on pain of being burnt or thrown to the bloodhounds. The cacique sent for the little gold which could be obtained by massing together the paltry trinkets of his tribe, and presented it to Ayora. The latter being dissatisfied, demands more, and seizing the cacique ties him up and compels him to order his people to make a further search. This being done, a few more trinkets are added to the fatal store. Ayora, still insatiate,

¹ Helps, vol. i. p. 392.

² Oviedo, as quoted in Helps, vol. i. p. 392.

³ Helps, vol. i. p. 393.

⁴ Ibid. p. 393.

⁵ Ibid. p. 393.

thereupon orders the unhappy cacique to be burnt alive before his eyes, and this was done in sight also of the miserable natives his followers.¹

By this and similar means Ayora amassed together a large amount of gold, though he never got back with it alive; for he and his whole force were surprised and cut off by the outraged and indignant Indios. In these transactions the lives of 400 Spaniards, and it is impossible to say how many natives, were sacrificed.

Before Ayora's defeat was known at Darien, Hurtado set forth to inquire about him, and on the way kidnapped 100 peaceable and inoffensive Indios, whom he reduced to slavery and carried off to Darien, where they were divided among the Spaniards, six each to the governor and "bishop,"² four to the treasurer, &c. The king's fifth (twenty slaves) was not forgotten. These slaves were sold at auction and branded for exportation, to work in the gold mines of Hispaniola. Even the dogs got their share of the spoil.³

¹ Helps, vol. i. p. 395.

² Oviedo, an eye-witness, informs the king of the extortion and dishonesty of the bishop and priests in these words, "Quanto estorbo el obispo, é sus clerigos, quán exentos é deshonestos." Helps, vol. i. p. 398. Bernal Diaz also informs us that for the frightful atrocities committed in Mexico under Cortes, the Pope of Rome offered for sale indulgences sent by the hand of a certain friar named Pedro de Aria, who so managed this business that in a few months he amassed great riches, which he remitted to Spain.

"Traxo unas Bulas de Señor S. Pedro, y con ellas nos componian, si algo eramos en cargo en las guerras en que andavamos: por manera que en pocos meses el fraile fué rico y compuesto á Castilla." Helps, vol. ii. p. 450.

³ To the owners of certain ferocious dogs which accompanied these expeditions was accorded a share of the spoil equal to that given to a foot soldier. One owned by Vasco Nunez, named Leonçico, earned for him in this way upwards of a thousand crowns.—Oviedo. Helps, vol. i. p. 399, *note*.

CHAPTER X.

PANAMA.

Murderous gold expeditions—Morales captures the native women and stabs them to death on the march—Pizarro—Espinosa stabs or throws to the hounds 40,000 victims and brands 2,000 others—Vasco Nunez de Balbao makes a partnership with Pedrarias to search for gold on the Pacific—He builds four vessels at Darien, transports them in pieces across the mountains to Panama, and ravages the Pacific coast—The partners fall out and Pedrarias orders Vasco Nunez to be executed.

MANY similar expeditions are sent out by Pedrarias ; among them, one under Becerra. This captain comes back laden with gold, and is accompanied by captives taken by force from friendly caciques, and branded as slaves. From one cacique he takes all his daughters, three or four in number, whom he uses as concubines ; another cacique he burns alive for bringing an unsatisfactory amount of gold, and so on, and so on.¹

Morales, another captain, goes with eighty men to the Isle of Pearls. He steals all the desirable females from a native town ; kills a vast number of the men, and throws twenty caciques to his dogs, who tear them to pieces, and eat their quivering bodies.² The injured Indios pursue him on his return : when Morales, to divert them, and quicken his retreat, commits an abominable act. At intervals on the march he stabs the women whom he has ravished, and thus puts to death another ninety or one hundred persons.³

Even Vasco Nunez, himself one of the cruelest of men, speaks of this as the vilest deed ever heard of. Oviedo stigmatizes it as Herodian.⁴ Pizarro was in this expedition,

¹ Helps, vol. i. p. 403.

³ Ibid. p. 407.

² Ibid. pp. 404-5.

⁴ Ibid. p. 407.

and may have derived from it some of those sinister views of policy which he afterwards carried out in Peru.

Badajoz now goes out with a gold foraging expedition. He obtains 80,000 castellanos of gold, and loses the whole by an Indian surprise.¹

Espinosa next tries his fortune at gold-hunting. On this occasion, for the first time in the history of the world, we learn something definite and immediate concerning the cost of gold obtained by conquest. In Espinosa's expedition there was a Franciscan monk, named Francisco de San Roman. After this priest returned to Spain, and while in the Dominican College of San Tomás of Seville, whither he had retired in disgust at the world, he stated that he had seen with his own eyes, killed by the sword, or thrown to savage dogs, in this "murderous" expedition of Espinosa's, above 40,000 souls.² In addition to this, Espinosa brought into Darien from the same expedition 2,000 Indios, whom he branded for shipment as slaves to Hispaniola, all of whom perished in a short time, some at Darien, some on the voyage, and the rest in the mines of Hispaniola.³ The net proceeds of this foray were 80,000 pesos of gold, so that the immediate cost of every two pesos was more than one human life. It would be curious to learn how the politico-economical axiom that "value is determined by cost of production" can be reconciled with such an instance of the cost of gold by conquest.

All the expeditions of this period were of the same general character. They were all planned to obtain gold; and red-handed, cruel murder was the sole means employed. Yet withal they failed; failed from the simple fact—which the delusive dreams of the eager adventurers never permitted them to observe—that the Indios had no gold, beyond a

¹ Helps, vol. i. p. 410.

² "Que había visto por sus ojos matar á espada y echar á Perros bravos en este viaje de Espinosa, sobre cuarenta mil ánimas." Las Casas, quoted in Helps, vol. i. p. 411.

³ Las Casas, in Helps, vol. i. pp. 412-13.

few trinkets which had been wrought from the scant findings of seldom-searched placers by many generations of men. They did not use gold money; they did not need gold for this or any other useful purpose; they had no gold quartz mines, and knew not how to work them if they had possessed them; so that in the end, and without counting the cruel and needless sacrifice of native life, the Spaniards failed to obtain sufficient gold to pay the expenses of their expeditions and the colonial establishments.

Notwithstanding these experiences, the Crown of Spain still believed in the advantage of searching for gold in the Indies. Yet the failure of the Darien colony was so complete that the gold smelting house at Darien had to be closed for want of supplies;¹ and so obvious, that it was acknowledged even by statesmen in Spain, who were too remote from the scene of operations to learn much about the cost or the nature of the gold forays, and were always the last to abandon, because they reaped the most from these expeditions.

They said that the colony had led to nothing—meaning no gold; and had founded nothing—meaning the abandoned Casa de la Fundicion or smelting house.

Vasco Nunez now comes to the front again. He conducts a gold-hunting expedition to the country of Dabaybe, but without success, except that of perceiving good signs of gold.

Shortly after this, his appointment as Adelantado comes from Spain, and he is granted the government of Panama. From this place he may be able to reach the wonderful land of gold mentioned by Comogre's son, and repeated by Vasco Nunez in his letters to the king. This is the express and only real object of the appointment; it is the express and only object of the expedition.²

Vasco Nunez first effects an understanding with Pedrarias, whose daughter, in Spain, he espouses by words in Darien,

¹ Helps, vol. i. p. 409.

² Ibid. p. 417.

and agrees to allow his newly-made father-in-law a share of the expected booty. In return, Pedrarias forwards Vasco Nunez's enterprise. The latter prepares to roam the South Sea, and reach Peru, by building four brigantines at Acla,¹ assisted by the forced labour of the natives. His plan is, after completing them, to take these vessels to pieces, and transport them on the bare backs of the Indios over the mountains to the Pacific Ocean, and there to put them together again.

Any one who has been on the Isthmus, and felt its hot and humid climate, will be able to understand the terrible difficulties of such an undertaking. How many of the gentle and affectionate Indios were mercilessly used up in hewing the trees we know not; but we do know that five hundred of them perished in the first portage of the timber, a distance of twelve leagues.² At this stage the wood turned out to be worm-eaten, and the whole work had to be done over again. It may not be too much to say that, in the end, the undertaking cost several thousand native lives.³

No sooner is it completed, the heavy timbers cut and transported over the mountains, and two of the four vessels put together and launched at Panama, than Vasco Nunez starts upon his foray for gold. He sails down the coast of the hitherto peaceful South Sea, and lands and despoils the natives everywhere. The two other vessels are subsequently completed, and now he has four of them, with 400 armed and desperate men aboard.

But as though an avenging Nemesis followed behind this enterprise, the robbers fall out among themselves, and justice gets her due. Pedrarias, hearing that Vasco Nunez intends, when once fairly away, to cruise on his own account, and without dividing with him, sends for him from Darien, accuses him of treason to the Crown (their common stalking

¹ A port about 100 miles south of the modern Aspinwall, on the Atlantic.

² Helps, vol. i. p. 421.

³ Consult incidents in Helps, vol. iii. p. 327.

horse), and puts him, his son-in-law, to death.¹ This occurred in 1517, and for the present it deferred the projected pillage of Peru. We shall see the attempt to carry this enterprise revived seven years later, upon a regular gold-hunter's basis, the conductors being Pizarro and Almagro, the one an illiterate² ruffian and outcast³ from Spain, the other also illiterate,⁴ a fugitive assassin from the same country.⁵ Pedrarias, as before, was one of the partners, his share being one-fourth, after deducting the king's fifth;⁶ the balance going equally to Pizarro, Almagro, and De Luque;⁷ the latter a *ranchero*, on the river Chagre, who had saved up some money which he now advanced for the purposes of the proposed expedition.⁸

Meanwhile the order of events renders it necessary to turn to the conquest of Mexico.

¹ "App. Encyc.," vol. ii. p. 515, after Irving, says that Vasco Nunez was beheaded. Helps says he was hanged.

² Pizarro could not write his own name. Helps, vol. iii. p. 421.

³ Helps, vol. iii. p. 422.

⁴ Almagro could not read. Helps, vol. iv. p. 114.

⁵ Almagro was a peasant who had murdered a man in Spain and fled to America to escape justice. Helps, vol. iii. p. 423.

⁶ Helps, vol. iii. p. 427.

⁷ Ibid. p. 427.

⁸ Ibid. p. 423.

CHAPTER XI.

MEXICO.

Expeditions of Bernal Diaz and Juan de Grijalva to Yucatan—These lead to Cortes' expedition to Mexico—Character of Cortes—His expedition departs without authority and commits piracy—Landing in Mexico—Demands for gold—Compliance of Montezuma—Cortes destroys his fleet, not from heroism, but fear of punishment at home—Massacre of the Tlascalans and alliance with the survivors—The city of Mexico—Hospitality and credulity of Montezuma—Cortes regarded as the Messiah—Treacherous seizure of Montezuma—His forced profession of vassalage to Spain—Cortes demands all the gold in the empire—His search for the mines—Montezuma, undeceived, asks him to depart—Arrival of reinforcements for Cortes—Death of Montezuma—Cortes besieges and captures Mexico, and puts it to the sword—Unexpected smallness of the booty—The Mexican mines under the Conqueror—Frightful mortality of the condemned natives—Terrible picture by an eye-witness.

RATHER more than six years had passed since the first exploration of the Isthmus for gold before it was perceived that its glittering title of Castilla de Oro was undeserved. In 1516 the Casa de Fundicion at Darien was closed, and several of the men in Pedrarias' command asked leave to go to Cuba. Among these was Bernal Diaz, who has written an account of the conquest. Diaz was allowed to go. Upon his arrival in Cuba he asked the Governor (Velasquez) for an encomienda of Indios. As owing to the almost complete extermination of the Indios these were now scarce, and Diaz was impatient to make his fortune, he effected a partnership with some other adventurers, among them Francisco Hernandez and the Governor Velasquez,¹ to

¹ "I must remark here upon the deplorable manner in which all these expeditions were managed: the governor descending to the condition of

seek new lands, and capture gold. Leaving Cuba in 1517 with three vessels and 110 men they soon sighted the coast of Yucatan, where they landed and commenced their usual operations—robbery, torture, murder, and spoliation. After obtaining a few gold ornaments, the natives, discovering their visitors' character and objects, refused to have any further dealings with them, and compelled them to go away. Upon their return to Havana they whetted the appetite of Velasquez with the sight of the gold they had secured; and he assisted them to fit out another expedition. This was commanded by Juan de Grijalva, Pedro de Alvarado being in command of one of the vessels. They made the mainland as before, raided upon the natives, got some gold, which they sent to Velasquez by the hands of Alvarado, and waited for reinforcements; for here the natives were highly civilized, and lived in stone dwellings, impervious to bullets and bloodhounds. Velasquez, more eager than ever, fitted out a considerable armada, the command of which he entrusted to an adventurer and gold miner named Hernando Cortes.

Cortes' occupation in Cuba was getting gold by means of an *encomienda* of Indios. "How many of whom died in extracting this gold for him, God will have kept a better account than I," says Las Casas.¹ Cortes was much addicted to gambling, in which occupation his composure and coolness were remarkable. He was neat in his person, and wore a beautiful gold chain and a diamond ring.²

The armada consisted of ten vessels (one of them a brigantine), 550 Spaniards, 200 or 300 Indios, 12 or 15 horses, 10 brass cannons, and some falconets. The outfit cost several thousand castellanos, without reckoning the

a merchant adventurer, and being concerned in the profits of each enterprise." Helps, vol. ii. p. 252.

¹ "Los que por sacarle el oro murieron, Dios habrá tenido mejor cuenta que yo." Las Casas, "History of the Indies," lib. iii. cap. 27, quoted in Helps, vol. ii. p. 249.

² Ibid. vol. iii. p. 8.

vessels or stores: Cortes contributing 5,000 castellanos, seven of the vessels, and certain stores, obtained upon a pledge of the future profits of his *encomienda*.¹

On the eve of departure, Velasquez, suspecting from certain preparations of Cortes that the latter intended, when once away, to conduct the expedition for his own profit (and to violate the partnership), revoked his official authority for its completion and departure; but before this could be prevented, Cortes, who was apprised of Velasquez's intentions, weighed anchor and sailed out of the harbour.

The expedition departed November 18, 1518.² On the voyage he pillaged the King of Spain's stores at Macaca, and a Spanish vessel at sea.³ After his arrival at Trinidad orders came from Velasquez to supersede him—but he refused to give up his command. At Havana, where he also stopped, similar orders reached him, but there he also disobeyed. In fact, to use his own words, he had become a pirate,⁴ and the subsequent voluntary destruction of his fleet at Vera Cruz, instead of being a heroic action, was done simply because there was nothing left for him but ruin, or such ample success in gold-hunting as should efface his piratical actions in the eyes of the king.⁵

He had no authority from Velasquez to make a colonial settlement, but only to seek gold,⁶ and this authority Velasquez had twice revoked to Cortes' knowledge. In order to give his acts a semblance of legality he caused his followers, after they had landed in Mexico, to request him in writing to form a colony and appoint officers;⁷ but this had no effect in removing their illegal and piratical character.

He lands in Mexico at Tabasco, whence he carries off an Indian princess (*Doña Marina*) to fill the double part of con-

¹ Helps, vol. ii. p. 251.

² Bernal Diaz, cap. 20, quoted in Helps, vol. ii. p. 253. "Su estandarte era de tafetan negro, con cruz colorada, etc." Herrera, in Helps, vol. ii. p. 257.

³ Helps, vol. ii. p. 258.

⁵ Ibid. p. 259.

⁶ Ibid. p. 273.

⁴ Ibid. p. 258.

⁷ Ibid. p. 277.

cubine and interpreter,¹ and then at San Juan de Uloa, where he sees the messengers of Montezuma, of whom he at once asks if their king has any gold. Being answered in the affirmative, he said, "Let him send it to me, for I and my companions have a complaint, a disease of the heart, which is cured by gold."² Awed by his cannon, his steel armour, and above all, his horses, the frightened messengers conveyed this insolent speech and grim jest to Montezuma, and brought back, alas! for the peace of their country, a sum of gold and an abundance of civil words.

Cortes first builds a fort at Vera Cruz, makes an alliance with the dissatisfied cacique of Cempoala, and sends what gold he had obtained to Spain, in the hope of getting authority for his expedition; but the Court treats his acts as piratical.³ Then he destroys his ships.

This last act was not his own. His followers demanded it, because each one knew he dared not return to Spain or any of its colonies, and feared treachery and desertion by the others, who might get away before them, and, turning king's evidence, inform the authorities where they could be found.⁴

After this, Cortes marches towards the city of Mexico. On his way he rides down the Tlascalans with his iron-shod horses, encountering 149,000 of them in one field,⁵ brings them to terms and pillages them,⁶ the gold and silver of the

¹ "It is clear that throughout the conquest of America the Indian women several times betrayed their country, under circumstances which do not seem to me to indicate so much a love of truth (as Herrera says of women generally) as a love of what is personal and near, and an indifference to what is abstract and remote, a disposition which has been noted equally of all women in all countries. In a word they loved their lovers and did not care much about their country." Helps, vol. ii. pp. 389-90.

² Ibid. p. 270.

³ Ibid. p. 281.

⁴ Very different from the self-sacrifice of the Helvetii. Cæsar, 4.

⁵ Helps, vol. ii. p. 291.

⁶ See reference to Spanish demand for gold in the Tlascalcan Senate.—Ibid. p. 290. There were 500,000 heads of families, or, say 2,500,000 people in Tlascala. Ibid. p. 296.

city of Tlascala especially exciting his cupidity. He then marches to Cholulu, where he strikes terror into the townspeople by slaying and burning them right and left.¹ After pillaging the town he continues his march, and comes in sight of the great valley of Mexico.

Looking down upon the wondrous cities of that magnificent plain, the adventurers thought of the booty it contained, and recalled a proverb well known in Spain: "The more Moors the more spoil."²

Approaching the city, he is met on the way by the king's ambassadors, who furnish at two places lodgment and banquets for his followers. Then he beholds Montezuma in a litter covered with a pall of green feathers adorned with gold, silver, pearls, and precious stones; his mantle being similarly adorned; on his head a mitred diadem of gold, and on his feet golden sandals.

They exchange presents, Montezuma giving to Cortes two collars ornamented with golden craw-fish, and Cortes to Montezuma (somewhat significantly) a collar of false pearls and diamonds.³ The procession moved towards the city, the people admiring the glistening armour of the Spaniards and the wondrous animals they bestrode.

They entered the city November 8, 1519. It contained from 300,000 to 800,000 inhabitants;⁴ Cortes had about 450 men. He is given a palace, and every provision is made for the comfort of his men. He opens proceedings with Montezuma by averring that he and his band are messengers from God and His deputies, the Pope and the King of Spain; and come to redeem Montezuma and his people from sin.

This was a crafty move. Upon being reported in Spain, and in case he triumphed in Mexico, it would serve to make the peace of Cortes with both crown and mitre, for it would prove that he had proceeded in the name of authority. It had a wonderful effect upon Montezuma, who, as

¹ Las Casas. See Helps, vol. ii. p. 302.

² "Mas Moros, mas ganancia."

³ Helps, vol. ii. p. 318.

⁴ Ibid. p. 319.

Cortes well knew,¹ believed, in common with his people, in the coming of a Messiah.²

Said the king, "We hold it for certain that you are the personages of whom our ancestors spoke to us, who would come from where the sun rises; and to your king I am greatly beholden and will give him of all that which I may possess."

Cortes perceiving the effect of his talk, followed it up with other of the same sort, and in effect made out an abstract of title to Montezuma and his whole empire.

The freebooters about Cortes must have grown tired of this palaver and felt anxious to come to business, for Bernal Diaz says that Cortes turned to his men and said to them all "We will soon finish with this. It is only the first touch, you know."³ Afterwards they got a lot of gold and trinkets, and thus ended the first day.

Next day Cortes asked Montezuma to see the temple, which request was granted. Here he saw the God of War, "covered with gold, pearls, and precious stones," and girt about with golden serpents. A golden shield and the faces of men wrought in gold and their hearts in silver surrounded the shrine. This sight intoxicated the Spaniards, who were impatient to be let loose upon the devoted city. Cortes resolves to begin the work by seizing upon Montezuma.

On the third day the king gave his treacherous guest some golden ornaments and one of his daughters.⁴ In return Cortes asked the king to go and live with his band in their quarters, in short to become his prisoner. To this ungrateful and audacious demand, the king replied with dignity: "I am not one of those persons who are put in prison. Even if I were to consent, my subjects would never permit

¹ From the ambassadors with whom he had previously conferred.

² See for evidence of this belief of the natives of America, the Appendix to this chapter.

³ "É dixonos Cortes a todos nosotros, que con el fuimos; con estos cumplimos, por ser el primer toque." Bernal Diaz, cap. 90.

⁴ Helps, vol. ii. p. 346.

it."¹ Cortes endeavours to urge him, and Montezuma shows him how absurd his demand is; when the colloquy is interrupted by one of the Spaniards who says, "What is the use of all this talk? Let him yield himself our prisoner, or we will this instant stab him."² The upshot of it was that Montezuma was carried a prisoner to the Spaniards' quarters, and there immediately put in irons.³

The credulity and infatuation of Montezuma were so great, that after being himself made a prisoner he assisted to make one of his nephew, Cacamatzin, the only one of the royal family who saw through the pretended Messiah, and real pirate, Cortes. After this (oh, the infatuation of a false belief!), at Cortes' request, Montezuma publicly recommended his nobles and people to declare themselves "jointly and severally" vassals to the King of Spain.⁴

With this act fell the Mexican Empire. The time for plunder and massacre had now come.

"As might be expected, one of the first things demanded of Montezuma after this act of vassalage was gold, of which a great quantity—no less than to the value of one hundred thousand ducats—was handed over to Cortes by the king."⁵

This was indeed a great quantity, for Mexico produces very little gold, her main yield of the precious metals being of silver. Even if the Mexicans knew how to obtain this metal from the ore, which is doubtful,⁶ it was too heavy for

¹ Helps, vol. ii. p. 348.

² Ibid. p. 349.

³ Ibid. p. 352.

⁴ Ibid. p. 363.

⁵ Ibid. vol. ii. p. 363. The Spanish ducat was equal to about \$2.39 American gold, or 9s. 7d. English money.

⁶ Before the arrival of the Europeans, the Aztecs were probably ignorant of the art of obtaining silver from ore, for we hear of few silver ornaments and no silver coins as having been used amongst them. See remarks on the gold dust in quills, and the copper and tin pieces employed in some of their provinces as money, in chapter i. of the present work. The silver and copper were probably obtained in a native state; the tin came from a mine in Taxco. The common money of the various provinces consisted of cacao beans or nibs of a species somewhat different from that employed in making chocolate. Oviedo says that these were sometimes counterfeited. Consult the letters of Cortes. Cartas, p. 311.

Cortes' views. What he wanted was very "portable property."

"He first took care to ascertain where the Mexican gold mines were to be found, and forthwith sent Spaniards, accompanied by Montezuma's officers, into the several provinces designated as gold producing."¹

He then obtained from Montezuma a complete map of the coast, and ascertained where the best harbours were situated.

By this time the foolish monarch² began to understand something of the character of the gods and Messiahs on horseback who had dropped down upon him, and begged Cortes to depart, offering him a load of gold for each of his men and two for himself.³ On pretence of assenting, Cortes induced Montezuma to order his people to assist him (Cortes) in hewing the timber for four ships (brigantines). These he really wanted for service on the lake in which the city of Mexico was situated, and they were actually built and subsequently used in the attack on the place.

At this juncture eighteen vessels and 800 men arrived at Vera Cruz under Narvaez, to arrest Cortes. Cortes first

and other authorities quoted in Bancroft's "Native Races," ii. 737; also Helps' "Conquest," ii. 255 and 365.

It is worthy of remark in this place that some writers are of the opinion that the Aztecs were not ignorant of the art of reducing silver ores. A letter published in the "San Francisco Stock Report" of November 7th, 1878, gives an account of a visit to the silver mines of Santa Eulalia, twenty miles east of the city of Chihuahua. The growth of a stalaetite sixty feet high and twenty feet in diameter in a chamber from which it is said to be evident a great bonanza was once extracted, together with other evidences, indicated the great antiquity of these mines, which it is supposed were once worked by the Aztecs, perhaps even the Toltecs, an earlier race. The formation of new ore upon the once clean walls of the chamber is mentioned in this letter. Facts similar to this last one have been encountered in the old Mexican mines, and are interesting in connection with inquiries concerning the process of the formation of ore deposits.

¹ Helps, vol. ii. p. 364.

² Diaz calls him "a hen;" Helps, "mean-spirited." Ibid. p. 368.

³ Ibid. p. 370.

tries to bribe,¹ then marches against the king's forces, defeats them and enlists the whole command under his flag. He then returns to Mexico. During his absence the city had revolted against the forces which, under command of Alvarado, had been left to watch it. In this strait the latter induced Montezuma to exhort his people to forbearance, and the Emperor complied. This act so exasperated the Mexicans that they stoned the feeble monarch to death. Cortes on his return besieges the city, is defeated, loses all his gold and silver,² retires to the country of the Tlascalans, obtains 150,000 Indian allies,³ again besieges Mexico, destroys it bit by bit, slaughters 300,000⁴ of its inhabitants, and after a series of carnages which lasted seventy-five days captures the city, August 13, 1521.

An orgie with the women who were captured alive, celebrated the victory,⁵ and then came the division of the spoil; but "the conquerors were entirely disappointed with the smallness of the booty." They put both the captured Emperor of Mexico, Montezuma's brother, and the King of Tlacuba to the torture to reveal the whereabouts of the coveted gold. The only reply they got was the disappointing one that during the siege the Emperor had caused "whatever gold, silver, precious stones and jewels" remained, to be thrown into the lake.⁶

The scope of the present work does not render it necessary to pursue the history of this conquest any further. How the city of Mexico was compelled to be rebuilt by the Indios at their own expense of materials, labour, and food; how the land was parcelled out among the conquerors, and the inhabitants given in *encomiendas*; and how the search for gold which was commenced with murder by fire and sword, was continued with murder by the lash and the mine—these

¹ Helps, vol. ii. 375.

² Ibid. 441.

³ Ibid. 521.

⁴ Torquemada says that the city and suburbs contained 120,000 houses. This would infer a population of say 750,000. Consult Helps, ii. 319.

⁵ Helps, vol. iii. p. 4.

⁶ Ibid. pp. 5 and 6.

are proceedings which if related in detail, would of themselves suffice to fill many volumes. That the reader may be able to form some judgment with regard to the sacrifice of life in the mines, an account of them twenty years after the country was conquered will now be given from the relation of an eye-witness.

In the library of Sir Thomas Phillipps, Bart., of Middle Hill, is an original manuscript letter from Fray Toribio Motolinia de Paredes, to Don Antonio Pimentel, Conde de Benavente, dated February 24, 1541. It is from this letter that the following quotation is made. First, however, it is necessary to state that Father Motolinia was a monk who had joined the Spanish colony in Mexico, and was "greatly honoured by his contemporaries and trusted by Cortes."¹

In the letter above mentioned, "this excellent monk gives an account of what he considers to have been the ten plagues of New Spain. 1. The small-pox.² 2. The slaughter during the conquest. 3. A great famine which took place immediately after the capture of the city. 4. The Indian and negro overseers. 5. The excessive tributes and services demanded from the Indians. 6. The gold mines. 7. The rebuilding of Mexico. 8. The making of slaves in order to work them in the mines. 9. The transport service for the mines. 10. The dissensions among the Spaniards themselves."³

In the description which he gives of the ninth plague, Father Motolinia dwells upon the loss of life amongst the Indians employed in the transport service of the mines. "They came from seventy leagues and upwards," he says, "bringing provisions and whatever was needful, and when they had arrived, the Spanish mine masters would detain them for several days to do some specific work, such as blasting a

¹ Helps, vol. iii. p. 63.

² There is reason to suspect that a far graver disease is meant, and that the Spaniards were responsible for its introduction.

³ Helps, vol. iii. p. 63.

rock or completing a building. The provisions they had brought for themselves were soon exhausted, and then the poor wretches had to starve, for no one would give them food, and they had no money to buy it.¹ The result of all this atrocity and mismanagement was that some died on their way to the mines; some at the mines; some on their way back; some (and these were most to be pitied) just after they had reached home. ‘Volvian tales que luego se morian.’”

“The number of deaths was so great that the corpses bred pestilence; and, mentioning one particular mine (or mining district), Motolinia affirms that for half a league round it, and for a great part of the road to it, you could scarcely make a step except upon dead bodies or the bones of men. The birds of prey coming to feed upon these corpses darkened the sun. ‘Y destos y de los esclavos que murieron en las minas fué tanto el hedor que causó pestilencia, en especial en las minas de Guaxacan,’² en las quales media legua á la redonda y mucha parte del camino apenas se podia pisar sino sobre hombres ó sobré huesos. Y eran tantas las aves y cuervos que venian á comer sobre los cuerpos muertos que hazian gran sombra á el sol.’”³

¹ The mines are usually in mountainous and sterile regions.

² The name of this province is now spelled Oajaca or Oaxaca. It is on the Pacific coast south-west of Vera Cruz.

³ Father Motolinia's letters to the Count of Benavente quoted in Helps, vol. iii. pp. 63 and 147.

APPENDIX TO CHAPTER XI.

AMERICAN BELIEF IN A MESSIAH.

A Messiah looked for by the Aztecs—By the Indios of Florida—By those of the islands discovered by Columbus—Unworthy use made of this belief by the Spaniards.

CORTES, in a letter to the king, states that Montezuma avowed that he and his subjects were descended from strangers who had come from a far country, whither their leader had returned; that the Mexicans had always supposed that the descendants of this leader would appear to them, and become their lord; that he held the Lord of Cortes (Charles V., King of Spain) to be such a descendant, and that, therefore, he and his people held Cortes for their master in place of this lord, and subjected all they had to his disposal. Even Helps, who puts a lenient construction upon the most outrageous acts of the Conquistadores, throws doubt upon this statement, and believes that, if it had any foundation at all, such foundation consisted simply in a belief, general to most of the American aborigines, in the appearance of a Messiah.¹

At a subsequent period, when the crafty Cortes asks Montezuma to publicly acknowledge vassalage to the King of Spain, and to induce his people (which he does) to do the same, he is represented as again referring to the expectation of a Messiah.²

The Floridian Indios worshipped the Spaniards under Cabeça de Vaca in so ample a manner that all the rights of property fell before their presence. The Indios who guided them did not take them to unfriendly tribes, because they were unwilling that their enemies should enjoy so great an advantage as to behold these new divinities. As they pro-

¹ Helps, vol. ii, pp. 321-2.

² Ibid. pp. 359-60.

ceeded, a general spoliation took place ; nothing was left in the houses of those Indios who were so fortunate as to receive the Spaniards. And whether this spoliation was effected by the Indios who guided them, or, so far as gold was concerned, as usual, by the Spaniards themselves, the despoiled Indios begged the latter not to distress themselves about it, assuring them that they held the loss of their goods as naught in comparison with the pleasure of having beheld them. So the Spaniards moved on in the assumed and accepted character of Children of the Sun, who had power to heal the sick, and take away life, from whom nothing should be concealed because everything was known to them. For the first few days after their arrival at any new place, the inhabitants never stood before them without trembling, and did not dare to speak or to lift up their eyes. The Spaniards kept up this imposture by assuming great state and gravity with them, and by speaking but seldom.¹

The origin of this grave imposture is traced to Columbus, who employed it in dealing with the natives of the islands he discovered and searched for gold. The curious will find frequent reference to it in the work of Washington Irving.²

¹ Helps, vol. ii. p. 328, and Ibid. vol. iv. pp. 438-9. Much of the above is from de Vaca's own narrative. Naufragios de Alvar, Nunez Cabeça de Vaca, cap. 31. Barcia. Historiadores, tom. ii.

² Consult Irving's "Columbus," *passim*.

CHAPTER XII.

YUCATAN AND HONDURAS.

The spoil of Mexico—Cortes sends the King's share and the regalia of Montezuma to the Court of Spain, and obtains legitimacy for his acts—His depredations continued—Aversion to lawyers—Search after gold mines—Enslavement of the Indios—Cortes sends de Olid to raid Honduras—De Olid turns buccaneer—Is pursued by Cortes—Montezuma's brother and another royal captive put to death on the march—Cortes ravages Yucatan—De Olid overtaken and killed—Cortes returns to Mexico to find himself superseded in command—The new governor of Mexico, Ponce de Leon—He impeaches Cortes—Is assassinated—Succeeded by de Aguilar, who also dies suddenly and suspiciously—De Estrada, the new governor—Cortes picks a quarrel with him and is sent to Spain—He obtains favour at the Court and is permitted to return to Mexico as a subordinate—His riches and subsequent poverty—He again returns to Spain, where he dies in obscurity and indigence—Mortality of the Mexicans occasioned by the gold-seeking expeditions of the conquerors.

IN the early part of 1521 the Spanish Crown sent out a governor for New Spain (then Mexico) named Christoval de Tapia; but Cortes and his associates drove him away. In 1522 Cortes, having gathered what he deemed sufficient spoil for the purpose in view, sent 88,000 pesos in gold bars¹ and Montezuma's regalia and wardrobe to the Court of Spain, with the request that in consideration of having conquered a new country for the Crown his acts might be legitimized. Although these treasures never reached Spain, having been captured at sea by a French corsair, the "Jean Florin," Cortes was recognized by the Crown, in a despatch dated Valladolid, October 15, 1522, as governor and captain-general.²

¹ If this was the king's quinto it shows that 400,000 pesos was all the spoil that had been obtained in Mexico up to that date.

² Helps, vol. iii. p. 16.

Notwithstanding this act of legitimation, the predatory character of Cortes and his band remained unchanged. In 1523 Cortes asks the Crown that no lawyers shall be sent to New Spain, or, if any should get there, that they may not have authority to advocate causes.¹ In 1524 he left the city of Mexico in a defenceless state to send a party of Spaniards to a reported gold mine in Mechoacan.² In the same year he granted encomiendas of Indios to his followers, in defiance of an express prohibition from the Crown.³ Also in the same year, he sent Christoval de Olid to make a raid on the Indios in Honduras. Olid, following his chief's example, turned buccaneer on his own account.⁴ Cortes, tired of the comparative inactivity which followed the capture of the capital, and anxious to add to those spoils which, as yet, had fallen far short of his expectations, determined to follow de Olid, and he set forth with an expedition from Mexico to sail and march 1,500 miles along an unknown coast. Fearing to trust the men behind him, he carries along with him the "large quantities of gold and silver" that remained in his hands. He also takes with him Doña Marina, as interpreter,⁵ and his royal captives, the Emperor of Mexico (Montezuma's brother) and the King of Tlacuba; and on one of the Carnival days before Shrovetide, in the year 1525, puts the two captives to death in the obscurity of an Honduran forest.⁶ He then marches through and ravages Yucatan, a country whose fertility, government, and civili-

¹ Similar requests were made by Vasco Nunez de Balbao, from Terra Firma, in 1513; by the Commissioners of Cuba in 1516; by Pizarro, from Peru, in 1529; and by Cabeça de Vaca, from La Plata, in 1541. Consult Helps, vol. iii. pp. 17-20.

² Ibid. p. 43.

³ Ibid. p. 143.

⁴ Ibid. p. 30.

⁵ Ibid. p. 34.

⁶ Ibid. p. 45. When led to execution the Emperor of Mexico exclaimed, "Oh, Malinché (Cortes), it is long that I have known the falseness of your words, and have foreseen that you would give me that death, which, alas! I did not give myself, when I surrendered to you in my city of Mexico. Wherefore do you slay me without justice? May God demand it of you!"

zation compared favourably with those of Spain itself.¹ A detachment of his band, under command of his cousin, Francisco de las Casas, overtakes de Olid, and assassinates him; when Cortes, securing all the spoil, resolves to return to Mexico by sea. A storm drives him away to Havana, and he only reaches Mexico in 1526, there to learn that his piratical adventures had scandalized the Crown of Spain, and induced it to supersede him in his lately granted authority. In November, 1525, Ponce de Leon had been created governor of New Spain, with orders to proceed thither immediately, and take a residencia of Cortes.²

The history of Cortes does not terminate here; for ten years later we find him, with the incurable habit of gold-seekers, expending his gains in new expeditions, this time to California, the lower portion of which he was actually the first to discover. But here we can conveniently agree to close his career in Mexico.

On the seventeenth day of the residencia of Cortes, the governor, Ponce de Leon, dies suddenly of poison, and the residencia is broken off. Marcos de Aguilar, his successor, dies two months after his appointment—Bernal Diaz says of sickness—but Diaz was one of Cortes' original companions, and might himself have assassinated de Aguilar, for he was none too good for such a business. To de Aguilar succeeds Alonzo de Estrada. With him Cortes picks a violent quarrel, when Estrada, probably fearing the same fate as his predecessors, sent the truculent conquistadore to Spain.

There Cortes contrives to make favour with the Court;³ is made Marquis del Valle, appointed captain-general, or military commander, subject to the civil governor of New

¹ Helps, vol. iii. p. 54.

² Ibid. p. 61. A residencia (a relic of ancient freedom in Spain, the form of which survived the dark ages) was an inquiry by any official into the actions of his predecessor. It amounted to an impeachment before the sternest of judges, but was often circumvented.

³ His "specimens of the riches and the curiosities of his new country dispelled at once the vapours of doubt which had lately obscured his name and his deeds." Helps, vol. iii. p. 168, from Herrera.

Spain, and permitted to return thither, which he does in 1530.

Cortes is said to have obtained £1,200,000 spoil in Mexico;¹ but we have not been able to find satisfactory authority for this statement.

Being charged during his residencia with possessing 200 *cuentos* of rent—that is, with *encomiendas* of *Indios* yielding 200 *cuentos* gold tribute per annum—he offers to commute his *encomiendas* for 20 *cuentos* of rent in New Spain, or 10 *cuentos* in the mother country.² In September, 1538, he complains that he has not means enough to live in the city of Mexico, and must reside in the country.³ His *Indios* had probably been worked to death by this time, and the “rental” of his *encomiendas* had fallen away. In 1547, having meanwhile again returned to Spain, there to find himself shunned at Court, he died in obscurity and poverty in the sixty-third year of his age, leaving behind him more orphan witnesses of his cruelty and rapacity than probably man ever did before.

Speaking of the native orphans of Mexico, the Spanish Auditor, Quiroga, writing to the Indian Council in Spain, says: “They are numerous as the stars of heaven and the sands of the sea; an immense number of orphans whose fathers and mothers have perished in the mines through the rigour of our Spaniards.”⁴ And all for gold!

¹ “The Silver Country,” by Anderson, Washington, p. 109.

² Helps, iii. p. 160.

³ Ibid. p. 204.

⁴ The Auditor’s description of the docility, diligence, and patience of the natives is quite affecting. His letter is dated August 14, 1531, and is printed in Helps, vol. iii. p. 208.

CHAPTER XIII.

GUATEMALA.

Its ancient populousness, wealth, and civilization—All destroyed by a few gold-seekers—Origin of its invasion—Native feuds—Alvarado despatched to Guatemala—His demands for gold—Wholesale slaughter of the natives—Enslavement of the survivors—Plentifulness of spoil—Prices in the Spanish camp—The native children taxed for gold—The adults forced by cruel labour in the mines to consume one another for food—Alvarado's death-bed repentance.

GUATEMALA is a country which appears to demand some mention, however brief, in this place. Its ancient populousness, wealth, and civilization are attested by many evidences,¹ yet all these were destroyed in a few months by a band of 280 gold-hunters under Pedro de Alvarado.

After the capture of Mexico by Cortes in 1521, a number of Mexican potentates sent ambassadors to him to treat for peace. Among these was the King of Mechoacan, a province about seventy leagues to the south-west of Mexico. From these ambassadors the eager ears of Cortes learnt of the South Sea and its islands abounding in gold, pearls, precious stones, and spices.² Upon this he sends a party of soldiers to view the sea, explore the intervening country, and take possession of both. This is done in 1522, nine years after the discovery of the same sea further south by Vasco Nunez. To get at the sea the Spaniards passed south of Mechoacan through Tehuantepec, where the terror of their deeds induced

¹ Helps, vol. iii. pp. 246 and 261.

² Ibid. p. 240. These stories formed the basis of Cortes' expeditions some years afterwards, in one of which California was discovered.

other native lords to offer their submission to Cortes. In order to propitiate his favour the envoys from Tehuantepec mention a country with which they are at enmity, and whose riches might well reward the researches of their dread visitors. It was through these native quarrels, due to the feudal condition of the country, that Cortes, like his ancient prototype Julius Cæsar, was enabled the more readily to plunder the country to which he had conducted his soldiers.

Cortes accordingly sends Alvarado to Guatemala in 1522. His proceedings are of the usual character. The innocent natives receive him with kindness and hospitality.¹ He then demands gold. This is given him,² when he demands more. The cacique exclaims that there is no more—that he has given all. Whereupon Alvarado threatens him with death if he does not bring more. The alarmed chief scours the whole country for gold, and collects together all there is to be found.³ This is given to the Spanish captain, who, in return, treacherously puts the cacique in prison, where he dies.’

Alvarado then ravages the country, terrifies the inhabitants of the towns, from one of which (Guatemala) he obtains “magnificent presents of gold, jewels, and provisions, which, it is said, required no fewer than 5,000 men (natives) to carry.”⁵

He then puts to the sword as many of 30,000 natives arrayed between him and the town of Quezaltenango as fail to secure their safety in flight; and in a second “battle” nearer to the town, commits such carnage that he says himself, although he had seen some of the fiercest battles in the Indies, he caused on this occasion the greatest destruction of life that had ever before been known in the

¹ Helps, vol. iii. pp. 242 and 268.

² Ibid. p. 242.

³ More than 30,000 pesos. Ibid. p. 242.

⁴ Ibid. p. 242. Even Bernal Diaz exclaims against the treachery of this proceeding on the part of Alvarado; but the Conquistadores had yet something to learn of Pizarro.

⁵ Ibid. p. 245.

world.¹ He then enters Utatlan, where he burns the chiefs, razes the city to the ground, and brands the inhabitants as slaves; in his own words "the lords to death, and the rest as slaves."²

Here the freebooters, flushed with spoil, wine, and women, resolve to rest and enjoy their ease. They build a fortified town, whose site, near the Volcan de Fuego, can be seen from the deck of every steamer that plies between Panama and San Francisco, and founded the place with a grand parade in which they turned out, adorned with plumes of feathers, and gold, and jewels. The plentifulness of spoil is evinced by the prices that obtained among them in this favoured land,³ for a pig brought seventeen to twenty pesos of gold; the tailor of the band demanded such prices for his handiwork that each movement of the needle was worth a real; and the shoemaker from his earnings might go shod in silver.⁴

Alvarado, now appointed by Cortes lieutenant-governor and captain-general of Guatemala, remains with his crew in their new settlement for several years, compelling the natives to provide them with everything they required, and much more than they needed.

"The unvaried tradition of the Indians relates that the lieutenant-governor imposed upon the inhabitants of Patinamit, or Tecpan-Guatemala, a burden that could not be borne. It was, that a number of children, boys and girls (one account says 800), should each of them bring him daily a reed full of golden grains. The children played about like children, and failed to bring in the required tribute. The extortionate governor punished or threatened to punish the adult

¹ "Nuestros amigos, í los Peones hacian una destruicion la maior del Mundo." Helps, vol. iii. p. 265, from Alvarado's "Relacion."

² Ibid. p. 267.

³ The plains were irrigated and yielded 300 for one of maize. Helps, vol. iii. p. 255. The cattle multiplied with marvellous rapidity. Ibid. p. 275.

⁴ Ibid. pp. 272, *note*, and 273. Even a year or two later eggs sold at a golden real each.

population.”¹ These, already overburdened with similar exactions, could endure their sufferings no longer, and revolted, with, of course, the usual consequences—death on all sides, death by thousands and hundreds of thousands.

When Alvarado had with merciless cruelty drained Guatemala of its pitiful trinkets of gold,² he abandoned the country, and, contrary to the orders of the Crown, joined the standard of Pizarro in Peru.³

It is related of this monster that his exactions of gold and the labour that he compelled the Indios to perform in other ways gave them no rest, not even enough to enable them to cultivate food for themselves, and that he thus forced them to eat one another.⁴

After receiving his death-blow Alvarado lived long enough to make a will, which, being drawn by a priest, contains many confessions of his misdeeds, all of which are sought to be atoned for by offerings to the Church. He had unjustly enslaved and branded the natives, therefore he leaves them in an *encomienda*, whose revenues shall go to the Church.⁵ As for the slaves in the mines, also captured and branded unjustly, he piously declares that they shall continue at the work until his debts are paid; for it seems that, like all the

¹ Helps, vol. iii. p. 307.

² “They are most poor,” writes the Bishop of Guatemala to the Emperor Charles V. in 1539, “having only a little maize, a grinding stone, a pot to boil in, a hammock and a little hut of straw with four posts, which every day is burnt down.” Helps, vol. iii. p. 374.

³ Alvarado went to Spain in 1527, was appointed governor of Guatemala and ennobled. He returned to Guatemala in 1530. In 1534 or 1535 he declares his intention of joining Pizarro, the fame of whose spoils, taken as the ransom of the Inca, is noised all over the world. He is forbidden by the Crown, but nevertheless proceeds in spite of the interdict. He joins Pizarro and is well paid for his assistance, and returns to Guatemala in 1535, whence he sets out upon other expeditions (on the Californian coast), and is killed in 1541. Helps, vol. iii. 329, 331, 377.

⁴ *Ibid.* p. 373.

⁵ See the provisions of this curious will in Helps, vol. iii. p. 378, *et seq.*

gold-hunters, he died poor. The murders he has committed he atones for by a present of 500 golden pesos to be sent to Castile, and there used for the redemption of captives from the Moors.¹

¹ After his death his wife, Doña Beatrice de la Cueva, whom he had brought out from Spain on his last voyage, was chosen by the Provincial Council as Gobernadora—the first instance of a woman having obtained that office, or, perhaps, any other amongst Europeans in America. Helps, vol. iii. 384.

CHAPTER XIV.

PIZARRO.

His momentous gold-seeking partnership—Andagoya reaches Peru—Its conquest abandoned for a time—Pizarro undertakes it—Sufferings of his command—Forays—The partners fall out—The memorable chalk line that was drawn by Tafur—Privations of Pizarro—He reaches Tumbez—Spoils of gold and silver—The richness of Peru—Pizarro returns to Panama to prepare for further conquests in Peru.

THE voyage of Cortes from the coast of Cuba to that of Mexico was but a slight affair, which had little bearing upon the conquest of the Main, or upon the production of the precious metals. On the contrary, that of Pizarro from Panama to Peru is "the greatest part of his career,"¹ and has an important relation to the precious metals, for it shows at what sacrifices and through what perils they were sometimes obtained by the Conquistadores.

It has already been shown that the search for Peru, instigated by the chance words of the cacique Comogre's son, was purely a commercial speculation, with no other object in view than the acquisition of gold and silver. The fate of the partnership of Pedrarias and Vasco Nuncz has also been related, and so have been the details of the subsequent partnership arrangements between Pedrarias, De Luque, and the illiterate gold-hunters Pizarro and Almagro. We have now to relate what came of this bargain, the most momentous the world has ever known; for it involved the lives of ten to fifteen millions of people.

Between the death of Vasco Nuncz (1517) and the last-named partnership arrangement (1524), Pedrarias had sent one Pascual de Andagoya along the coast in 1522. This

¹ Helps, vol. iii. p. 426.

man, it appears, had succeeded in reaching Peru, and there gave the natives an indication of the fierce and reckless character of the strangers with whom it was fated that before many years they should have to contend in greater numbers. Pascual becoming disabled, and Pedrarias being at that time intent upon a gold foray into Nicaragua, the Peruvian project was again laid aside. In 1524 it came up once more, and the famous quadripartite partnership having been formed,¹ Pizarro set sail with one vessel (one of those built by Vasco Nunez), two canoes, eighty men, and four horses.² These forces were procured at great expense—the men employed to get the ships ready for sea receiving two golden pesos a day and rations, and those who were enlisted, each receiving advances of fifty to a hundred pesos or more.³

Off the coast of (the subsequent) New Granada, where the shores were nothing but desert, the expedition ran short of provisions. After eating their horses, the men were reduced to chewing a dry cowhide. Here twenty-seven of them perished from starvation. Succour arriving from Panama, they resumed their voyage, and landing at Puerto de la Candaleria, scoured the country, and captured a village, where they made their first haul of gold, in the shape of some paltry ornaments. How many native lives were sacrificed to obtain these baubles is not related.

Frequent repetition of these incursions, in which it may

¹ In 1526 Pedrarias quitted this partnership. Up to that time it was nothing but loss, and Almagro made a levy upon the Governor, telling him that his only contribution to the funds of the partnership had been a single she-calf. This made Pedrarias angry. He reminded Almagro of the many soldiers whose lives had been sacrificed in the enterprise, and whose aid, but for his (Pedrarias') official countenance, the expedition would not have secured, and wound up by demanding 4,000 pesos to go out. After some hot altercation, Almagro signed a bond to pay Pedrarias 1,000 pesos "to renounce all rights and claims to the enterprise of Almagro and company." Oviedo, "Hist. Ind.," lib. 29, cap. 23. Helps, vol. iii. 440.

² Helps, vol. iii. p. 427.

³ Ibid. p. 427. Doc. Inéd. xxvi. 257.

reasonably be conjectured that every ounce of gold cost at least a hundred native lives, afforded the Spaniards in the end enough gold to warrant their sending the treasurer, Nicolas de Rivera, back to Panama with the spoil. This was done in order to procure reinforcements from Pedrarias. The latter, it seems, was very angry when he heard that so many Spaniards had perished for so small a return of treasure. As for the Indios who had been massacred, this does not appear to have been worth a thought. Before this, however, Almagro had set sail with the second vessel belonging to the partnership, and finding Pizarro at one of the little ports on the coast, the two worthies joined forces, and made an attack upon the first native town they found large enough to promise any gold. This was on the San Juan river (lat. 4° N.). They slaughtered a number of Indios, captured others, and got altogether the weight of 15,000 pesos in gold of an inferior description.¹

This spoil being sent to Panama by the hands of Almagro, procured them in return² a further reinforcement of forty men and more provisions. Meanwhile Bartolomé Ruiz, Pizarro's pilot, pushes down the coast as far as Zalongo (near Puerto Viejo?), captures some castaway natives on a raft, from whom he gets some gold trinkets; hears of the great King Huayna-Capac and the famous city of Cusco, where there is much gold;³ and returns to the San Juan, where Pizarro has remained. The commander has meantime lost fourteen men in foraging for gold; and the rest are much reduced from sickness and privation.

Reinforced by Almagro's recruits, they all re-embark, and push down the coast to Tacamez, where they again raid on the natives, procuring a little gold, and as many women as they desire.

At this point Almagro and Pizarro quarrelled—probably

¹ Helps, vol. iii. p. 437.

² From the new Governor Pedro de los Rios. It was at this juncture (1526) that Pedrarias had gone out of the partnership.

³ Helps, vol. iii. p. 438.

over the division of the gold,—Pizarro claiming that all the privation had been his, and declaring that he would return to Panama. High words passed between them, and swords were drawn; but after a stormy scene, and much crimination, they became reconciled. They returned to the island of Gallo, a little to the north of Tacamez, whence Almagro sailed to Panama for additional succour. Whilst the commanders were sustained by sanguine hopes of “discovering that which would enrich them all,” the men, worn out by privation, desired to return to Panama. One of them contrived to send a secret message to the Governor, in which, alluding to the exposure of himself and his comrades (not an allusion to their continual slaughter of Indians), he calls Almagro the salesman and Pizarro the butcher.¹

This message resulted in the despatch of a lawyer named Tafur to the island of Gallo, there to enable the men freely to choose whether they would return or remain with the commanders. Tafur reaches Gallo, goes on board Pizarro's vessel, draws a chalk line on the deck, and tells the men to choose. Fourteen men, amongst whom were a Greek from Candia, and a mulatto slave, stood by the side of Pizarro; the rest returned to Panama.

With his reduced company Pizarro went to a small island called Gorgona; and Almagro returned to Panama to endeavour to obtain other recruits and supplies.

Three months passed away before he succeeded. On his return to Gallo he found Pizarro and his company in a pitiful condition, having during many weeks subsisted on shellfish found upon the beach, and other precarious supplies of food.

The marauders now pushed further down the coast, passing in view of the towering summits of Chimborazo and Cotopaxi, though nothing of this was said in their narratives; their minds being fixed less upon the marvels of nature than “gold, rich stuffs, and precious stones.” In the

¹ “Recogedor y Carnicero.” Helps, vol. iii. p. 442.

² Ibid. pp. 445-6.

course of twenty days, having meanwhile frequently landed and scoured the country to little purpose, they arrived at the town of Tumbez, in the bay of Guayaquil; and here for the first time came upon undoubted signs of the objects of their search.

At a small island which they had passed the day before, the Spaniards had found and pillaged a native temple, containing a stone image and rich offerings of gold and silver pieces, wrought into the shape of "hands, women's breasts, and heads, a large silver jug, which held an arroba (four gallons) of water," &c.¹ At Tumbez, where they were received with wonderment and hospitality (the place was too strong to attack), they beheld a fortress with six or seven walls, aqueducts, houses of stone, and vessels of silver and gold. Being invited into the temple and palace (for Tumbez was a watering-place where the Inca, Huayna-Capac, occasionally dwelt), they perceived that the former was lined with plates of gold, the latter filled with gold and silver vessels, furniture, &c., and the gardens ornamented with golden statues.

The Spaniards resolved to start for Panama, and return with forces enough to destroy this peaceful and hospitable town, slaughter its inhabitants, and capture the gold it contained. Before putting this design into execution they sailed down the coast a little farther, went ashore, where they were received with the usual hospitality, and obtained a couple of native boys, who were taught on the voyage and at Panama to speak Spanish, with the view of employing them as interpreters in the projected expedition against Peru.

This being done, they sped back to Panama, where they arrived at the end of the year 1527, freighted with great news.

¹ Helps, vol. iii. p. 449.

CHAPTER XV.

PERU.

Pizarro goes to Spain for troops, supplies, and authority—He obtains all these, and in addition a title of nobility—Returns to Panama and sails for Peru—He lands upon and sweeps through the devoted country—Spoils—Civil feuds in Peru—Death of Huayna-Capac and dissensions between his sons—Pizarro destroys the peaceful city of Tumbez—Messengers from Atahualpa—Pizarro artfully espouses his cause and betrays him—Atahualpa's naked followers put to the sword and himself taken prisoner—Pillage of the Peruvian camp—Atahualpa's ransom—Enormous booty—The Inca treacherously murdered—The empire desolated by the Spaniards—Amazing destruction of the natives—The sword, the bloodhounds, and, worse than all, the mines—Encomiendas—The mines of Potosi—Cost of gold obtained by conquest and slavery.

AT Panama the partners Almagro, Pizarro, and De Luque discussing their prospects, agreed that before all things it was necessary that Pizarro should go to the Court of Spain. What was wanted was a clear title to their discovery, free from any claims on the part of the governor of Panama; and more aid in the shape of men and provisions than either the governor could afford them or their now nearly exhausted means could procure. Pizarro accordingly went to Spain, where he was so successful that in January, 1530, he sailed from Seville with two ships and 125 men, with the latter of whom he duly reached Panama.

The story he had to tell his partners was not over-pleasing to them, particularly Almagro, for it seems that in his representations to the Court, Pizarro had omitted their part in the enterprise and had so enlarged upon his own that he had been created a Knight of Santiago, and had obtained

the sole Governorship (Adelantado) of Peru¹ for himself. For De Luque he had obtained the bishopric of Tumbes (the Inca's little sea-side resort, as yet unconscious of the fatal distinction conferred upon it); for Almagro, who had lost an eye in one of their gold forays, and who had therefore fared worse than either of his partners, nothing.

More than this, Pizarro had brought out with him four of his own brothers, a circumstance that did not help to allay the discontent and jealousy of Almagro.

However, a peace was again patched up between the confederates, and their new expedition was prepared for sea. Consisting of three vessels, 183 men, and thirty-seven horses, it set sail December 28, 1530 (Feast of the Innocents), and in three days reached San Mateo, where Pizarro landed his forces and commenced that march through the country which was to end in the subjugation of an empire and the destruction of millions of human lives.

The story can henceforth be told more rapidly. Pizarro now had force enough, particularly in the thirty-seven horses, to sweep all before him. He was resolved to grasp at every grain of gold and silver which the country contained; no matter at what cost of life or suffering. He had toiled and hungered in this enterprise for six years, and now that his reward was within sight he resolved to take it.

From San Mateo he marches upon the town of Coaque, which he puts to the sword, capturing trinkets amounting to 15,000 pesos in gold, 1,500 marks in silver, and many emeralds. These he sends to Panama and Nicaragua, to procure further reinforcements of men and horses.

It is seven months before the latter arrive. Meanwhile a civil war in Peru, unknown to Pizarro, is sapping the basis of the empire and preparing it for his hands; Huayna-Capac is dead and his two sons are quarrelling for the throne.

¹ "Two hundred leagues down the coast from Tenumpuela (island of Puña) to Chíncha." The wording is important, for it gave rise to the feuds between Almagro and Pizarro, in which much blood was shed.

Upon the arrival of his reinforcements Pizarro ravages many villages on his way to the bay of Guayaquil. Arriving there he puts off to the island of Pufia on rafts, and is received with hospitality and presents of gold and silver by the chief curaca, a Peruvian title corresponding to cacique. In return he seizes upon the curaca and his sons under pretence that an attack upon him was being planned, and after duly terrifying them, sets the chief free, in order to avoid alarming the people of Tumbez.

He then sets off for Tumbez, establishes himself in a couple of adjacent forts, and after some preparation attacks and puts the town and the surrounding country to the sword, plundering right and left, and distributing the surviving Indios into repartimientos. This is in May, 1532. More reinforcements arrive from Panama, and Pizarro sends by the return vessels the king's fifth of the spoil, and with his own share pays for his supplies.

In September, 1532, Pizarro marched upon Cassamarca, plundered the Indios on the way, and applied torture to compel them to reveal where he might find more gold. Midway between San Miguel and Cassamarca messengers come from Atahualpa, that son of Huayna-Capac who had succeeded in possessing himself of this portion of Peru. They bring presents of gold and precious stones and tenders of welcome. Pizarro in return offers to espouse the cause of Atahualpa against his usurping brother. It was the artifice of Cortes all over again, *divide et impera*.

Pizarro then pushes on, and entering Cassamarca, there fortifies himself and sends an insolent message to the Inca, who, with his army, is in the field a league distant, bidding him to come to him. His envoys are Fernando de Soto and Fernando Pizarro, the latter of whom tells the Inca that "one horse was sufficient to subdue the whole country." The Inca smiles at the threat implied in these words, but promises to come.

This he does, and the Peruvian and Spanish chiefs meet at Cassamarca, Atahualpa attended by 5,000 naked and

unarmed men, led by captains wearing (alas !) golden crowns and armour.¹ Then begins the parley on the part of Pizarro. Father Vicente advancing towards the Inca tells the story of the Creation, the coming of Christ to abolish idolatry, the appointment of the Pope, and by the latter the charge of Charles V. to conquer idolatrous lands by the arms of his lieutenant Pizarro, who is authorized to extend to Peru the same benefits which the other lands of America have received. [At this moment there was scarcely an Indio left alive in Hispaniola.] He wound up by demanding tribute under penalty of fire and sword.

The Inca's reply was to remind them that they had already pillaged the country, and he demanded back the spoils they had taken.

Father Vicente then returns to Pizarro and bids him make no delay, when Pizarro lets loose his bloodthirsty followers, slaughters 2,000 of the Inca's attendants, and takes the Inca himself prisoner with 3,000 others ; the Spanish injuries amounting merely to one horse wounded.²

Next day Pizarro pillages the Inca's camp and gets 80,000 pesos of gold, a lot of silver utensils, emeralds, women, and provisions.

Atahualpa observing that the chief concern of the Christians was to obtain gold,³ offers for his ransom to fill the room of his imprisonment as high as he could reach, eight or nine feet, with gold, if they gave him two months' time.⁴

¹ Helps, vol. iii. p. 531.

² Ibid. pp. 535 to 549.

³ Ibid. p. 551. The dearest metal of the Peruvians was copper, and the Inca wondered, after seeing that the Spaniards possessed glass, which he considered more valuable than gold, why they had come so far and behaved so ill for such stuffs as gold and silver. Ibid. pp. 478 and 554. Voltaire, "Hist. Europe," ii. 2, says that the Peruvians used golden arrows. Golden barbs to arrows have been recently found in use among the aborigines of Queensland, Australia. The "Colonies" newspaper, 1879.

⁴ Ibid. p. 551.

This stupendous offer being very readily accepted, arrangements were made to receive the ransom. Pizarro now obtains from Panama reinforcements of 6 vessels, 160 men, and 84 horses.¹ Fernando Pizarro goes to Pachacamac for the ransom and gets 27 loads of gold and 2,000 marks of silver.² Three soldiers are sent to Cusco for another instalment of the ransom, and there behave with the greatest insolence, avarice, and incontinence.³ So far the gold alone amounted to 1,326,539 pesos of pure metal. The gold and silver eventually amounted to £3,500,000.⁴ When it was all paid, the Inca instead of being liberated was loaded with chains, condemned by vote of the Spaniards to be done to death, tied to a stake and murdered with a cross-bow-string.⁵

It is hardly necessary for the purposes of the present work to pursue this story any farther. The fate of Peru may be summed up in a few words. At the period of the Spanish Conquest it contained perhaps fifteen, certainly from ten to eleven millions of inhabitants.⁶ By the year 1550 several millions had been destroyed.⁷ In 1580, when they were counted, under the general census ordered by Felipe II., their numbers had fallen to 8,280,000.⁸ In the course of two centuries they had diminished to fewer than 1,079,122.⁹

¹ His force to date had been 162 men. Helps, vol. iii. p. 537.

² Ibid. p. 560.

³ Ibid. p. 561.

⁴ "App. Encyc.," art. "Peru."

⁵ Helps, vol. iii. pp. 574 to 579. The death-vote was 350 to 50. There is some discrepancy of numbers here.

⁶ Ibid. p. 537, from "Antigüedades Peruanas," c. iii. p. 65.

⁷ Ibid. p. 146, *note*. Father Domingo says one-half to two-thirds, but this was probably an exaggeration.

⁸ Ibid. p. 537, *note*. According to Malte-Brun, vol. iii. p. 347, the first census was taken in 1551, and including Santa Fè and Bogota, the population of Peru at that period was 8,255,000. This is considered the more correct number. By Santa Fè and Bogota is understood all of New Granada, now divided into New Granada and Equador.

⁹ Morse, "Gazetteer," 1823, p. 591. This includes Spaniards and other Europeans, as well as negroes, mulattos, and mestizos. The same author, p. 519, gives for the population of New Granada (now New Granada and Equador) in 1808, 1,800,000 souls, including Europeans.

When the cause of this amazing depopulation¹ is inquired into there is but one answer: the mines.

From the moment that the Inca was murdered the cruel work began. Thousands and hundreds of thousands of the peaceful Indios were murdered in cold blood; the land was ransacked for gold; and in this search neither age nor sex was spared.² Before that search ended, by which every ounce of metal which the unhappy Indios had possessed was secured by the Spaniards,³ the former were reduced to the most wretched slavery and were compelled to work in the mines.

Encomiendas of Indios were at first granted by the Spanish authorities to the Conquistadores for one life; in 1536 for two lives, *i.e.*, during the lives of the first grantee and of his successor; then they were abolished, then granted again for two lives, then confiscated by the Crown; in 1559 they were granted for three lives, in 1607 for four lives, and in 1629 for five lives.⁴

The encomienda did not convey any land, only the personal services⁵ of the Indios. Land, however, and until about a hundred years after the conquest, was given for nothing; the horse-soldiers receiving a cavalleria and the foot-soldier a peonia, &c.

At first the slavery of the Indios was absolute. Under

If these countries be included in the limits of ancient Peru, there existed in all of them towards the close of the last century not more than 2,500,000 Indios and mixed races of partly native blood.

¹ Las Casas, who though "fervid in condemnation is not noted for inaccuracy or carelessness in his statement of fact," declared ("Destrucción de los Indias," p. 5) that in the first forty years after the discovery of America, twelve or fifteen millions of the natives had been destroyed by the infernal work of the Christians, "infernales obras de los cristianos." Helps, iv. p. 390. Helps prefers to extend the time to the first sixty years and to count the depopulation at twelve millions. This is frightful enough.

² For instances of these cruelties, consult Helps, iv. 52, 53, 58, 375, and *passim*.

³ For instances of spoliation consult Ibid., *passim*.

⁴ Helps, vol. iv. pp. 354 to 359.

⁵ Ibid. pp. 360, 386, 392.

this system they died so fast that towards the beginning of the seventeenth century the government established the *Mita*. By this law only the *Indios* of the ages from eighteen to fifty were compelled to work in the mines, and of these only one-seventh were to work for a period of six months, when they were to be succeeded by another detachment of one-seventh; so that the same individual would only work once in three-and-a-half years. He must, moreover, be paid half a dollar a day.²

But these regulations were evaded by the Spaniards,³ and in effect the labour was unremitting.

In the Muñoz collection of manuscripts relating to Peru, there is a letter written to the King of Spain by Father Domingo de Santo Tomas, dated 1550. In this letter the writer alludes to himself as a poor monk whose duty did not require him to look into such matters, but whom pity and Christian charity did not permit to witness them in silence. He lived in Peru, and he says that in ten years one-half or even two-thirds "of men, cattle, and the works of men" had been destroyed, "*. . . hoy ha diez años que ha que yo entré in ella, hasta ahora no hai al presente la mitad i de muchas cosas dellas ni aun de tres partes la una, sino que todo se ha acabado.*"⁴

In the course of this letter the monk gives an elaborate account of the horrible sufferings and privations of the *Indios* in the mines of Potosi, and his conclusion is: "*Se mueren los pobres como animales sin dueño . . . los que de esto se escapan jamas buelben a sus tierras.*" The poor creatures died like cattle, and even the few who escaped alive, never reached their homes.

¹ Helps, v. iv. pp. 392-3.

³ Jacob, vol. ii. p. 116.

² Malte-Brun.

⁴ Helps, vol. iii. 146, *note*.

CHAPTER XVI.

BRAZIL.

Gold discovered in 1577—Plunder of the natives—They retire to the interior—The placers of Jaragua discovered in 1670—Of Minas Geraes in 1680—Rush of Portuguese colonists to the diggings—The natives forced to work in them—Physical, social, and economical aspects of the placers—Their great productiveness—Taxes upon gold—Statistics of the production—A hundred and eighty millions in all—Comparison with California and Australia—The Quinto—The magnitude of the Brazilian product enables Portugal to demonetize silver.

BRAZIL was discovered by Vincente Yanez Pinzon, a Spanish captain and companion of Columbus, in January, 1500. It was rediscovered, and more completely explored in the following April by Pedro Alvarez de Cabral, a Portuguese navigator, and by Americus Vesputius in 1503. Notwithstanding the Papal Bull which gave to Spain all that portion of the Indies discovered west of a given line¹ Spain neglected to urge her claims to Brazil, and Portugal retained a nominal possession of the country. By the explorers of that period, whose sole object, under whatever specious disguise, was the acquisition of the precious metals, this possession was esteemed of no value, until 1549, when, it being found that the natives possessed gold ornaments, the presence of gold in the beds of the rivers was suspected, and the country was regarded with more interest at the Portuguese Court. In the year 1555 Villegagnon, a knight of Malta, applied to Admiral Coligny for leave to invite the Huguenots of France to emigrate to Brazil. This

¹ This Bull, issued by Pope Alexander VI., and dated May, 1493, literally gave to Spain all countries west *and south* of a meridian drawn from pole to pole 100 leagues west of the Azores; but this blunder was afterwards rectified, and the line placed 270 leagues farther west, by an arrangement between the two Powers.

permission Coligny obtained from King Henry II. The Huguenots, who were then bitterly persecuted, availed themselves of the opportunity to send a colony to Brazil; the movement amounting in two years to some 10,000 persons. These colonists founded the city of Rio de Janeiro. The hardships of their new life, aggravated by the unfaithfulness and tyranny of Villegagnon, whose solicitude for religion was a sham, and whose sole object was to plunder the natives and the colony for his own ends, drove the Huguenots back to France. Four years later the Portuguese took possession of the settlement, and established their flag along the entire coast.

It was during this period, and in the year 1577, that gold placers were first discovered in Brazil;¹ but almost a whole century elapsed before any systematic attempts at mining were begun.

During the latter part of the sixteenth and early part of the seventeenth centuries, the English, then at war with Spain and Portugal, attacked and plundered the settlements on the coast; their object being, like that of their rivals, the acquisition of the precious metals.

The Netherlands, then at war with Spain, and animated by a similar motive, attacked and captured San Salvador in 1624, obtaining an immense booty. In 1630, and from 1633 to 1636 they sacked nearly all the Portuguese settlements on the coast of Brazil, and established Dutch colonies in their place. In 1654 the Portuguese again obtained possession of Brazil, and remained masters of the country until it achieved its independence in 1822.

Upon the first settlement of the country by Europeans the natives were plundered of the few gold ornaments or trinkets which they possessed, and commanded under pain of death to seek for more. The boundless extent of the country, and the slender resources of the Europeans effectually prevented the execution of their threats, and preserved

¹ Baron von Humboldt's "New Spain," iii. p. 401.

the natives from that extermination which befell them in the West India Islands, in the comparatively narrow empires of Mexico and Peru, and upon the Isthmus. The Portuguese rode along the coasts and rivers terrifying the inhabitants with their horses, their bloodhounds, their arquebuses, and their coats of mail. They seized upon the women, and reduced the men to slavery. But their depredations soon wore themselves out, for the natives retreated to the interior, and left them to solitude, and to their own resources and evil thoughts.

Among the productions of the colony which were sent to Portugal was a small amount of placer gold, obtained in insignificant quantities in the sands of the streams upon which the settlements had been made. Many of the natives whom the Portuguese succeeded in seizing and reducing to slavery were sacrificed in the procurement of this gold.

Some of the worst of the many bad characters who composed the settlements, tired of the restraints of social life, or else compelled by their companions to retire from the colony, sought a refuge in the interior, where they followed a predatory life, occasionally appearing in the neighbourhood of the settlements to obtain supplies in return for the little gold they managed to pick up or extort from the natives.

The unusually large quantity of gold from these rovers which found its way into the settlements about the year 1670 attracted the attention of the colonial authorities ; but the gold-finders refused to impart any information upon the subject unless they were accorded a pardon from the king for all offences, and full protection for the future. This being obtained they stated that they had discovered a placer of gold at Jaragua, in the province of San Paulo, and had taken out some nuggets of considerable size.¹

¹ Some authorities place the date of the discovery of gold by the outlaws of Brazil so late as 1694, in which year it is stated that there arrived at Lisbon about a ton and a-half (over £160,000) of gold obtained by "a body of outlaws in a distant part of Brazil, and who, to get a market for it, submitted to the king's fifth." "Universal History,"

This information led to the exploration of the country by parties from the settlements, and by the year 1680 several placers were laid open, the most important being in the province of Minas Geraes (general mines).¹ It was not, however, until after 1690 that their product became so important as to make itself felt in Europe. From this time until after the middle of the following century new placers continued to be discovered, and the product to augment. Afterwards the placers fell off, and were eventually succeeded by the exploration of quartz mines, which even at the present day yield a small product.

No sooner had the placers of Brazil become productive than they attracted a rush of colonists thither from Portugal. The natives were now hunted down² with more system and success, and great numbers of them reduced to slavery in the mines, where as they perished they were supplanted by negroes obtained from Africa.

The physical aspects of the placer country, the nature of the deposits, the mode of working them, the cost of production, the character of the earlier discoverers and miners, the usages that grew up from these circumstances, and the general condition of society in the mining regions will now be briefly alluded to.

The country was mountainous, in some parts sterile and dry, in others clothed with impenetrable forests, and abounding with enormous reptiles. Even when not red.
ed. London, 1782, vol. xix. p. 20. Others attribute the discovery to the Paulistas, but this discovery appears to have been of richer diggings some twenty years after the original discoveries and earlier shipments of gold to Portugal.

¹ Minas Geraes, now a province, was formerly a *capitania* of Brazil, and in 1714 was districted into four *comarcas*, viz.: S. João del Rey; Sabara, Villa Rica, and Cerro do Rio. The province contains about 223,500 square miles.

² "Nearly all the revolutions that have occurred at Para are directly or indirectly traceable to the spirit of revenge with which the bloody expeditions of the early slave hunters are associated in the minds of the natives and mixed bloods throughout the country." Mr. Kidder's "Travels in Brazil," 1844. Macgregor, iv. p. 165.

mote from the settlements it was everywhere difficult of access. Food and supplies had generally to be brought from a vast distance, and upon the shoulders of slaves. For example, from Ouro Preto to Rio de Janeiro—200 miles—took fifteen days.¹ From the mines of Matto Grosso to the market at Para was 1,000 miles in a straight line: 2,500 miles by the river route.² There was a dry and a rainy season, for which latter the miners had always to wait.³

The placers consisted of the gravel banks and beds of small rivers flowing from lofty mountains, the richest beds having been found on the flanks of the Sierra dos Vertentes and the Sierra do Salto in lat. 20° to 21° south, though many were found in other localities.

The earth washed for gold is described by Mr. Mawe and Dr. von Spix as a ferruginous sandstone conglomerate. The soil is red, and remarkably ferruginous. The gold lies for the most part in a stratum of rounded pebbles and gravel incumbent on the solid rock. This the miners called *cas-calhão*.⁴

The primitive mode of working was with gourds, or wooden bowls: subsequently, and where water of a sufficiently high level could be commanded, the ground was cut in steps about twenty or thirty feet long, two or three feet broad, and one foot deep. Upon each step stood six or eight slaves, who, as the water was allowed to flow gently from above, kept the earth agitated until it was reduced to mud and washed below. At the bottom of a series of these steps was cut a trench into which the precipitation flowed, and where after five days' washing it was partially cleansed. It was then removed by hand to an adjoining stream, and there subjected to the bowl process of separation.

When the placers of Goyaz and Matto Grosso were first opened, 1694 to 1718, the slaves employed by the gold seekers commonly obtained for their masters three and

¹ Macgregor, iv. p. 206.

² Ibid. p. 201.

³ Ibid. p. 144.

⁴ Ibid. p. 142.

even four ounces a day; but this fertility of the mines did not last in any instance beyond the first year, although, until after the middle of the eighteenth century, the mines, if not profitable, were very productive. In 1846 the daily product of a miner scarcely exceeded a pataca (about three shillings) a day.¹ At the present time these placers are about to be worked by the hydraulic process, and they may again become productive enough to engage the attention of the world. It is understood that operations of this character have already been commenced in the district about 100 miles north of the St. John del Rey mines.²

In the early days the only food to be obtained in the mountains was a few white deer and mangabas, a wild fruit. The price of corn at the mines was more than a pound of gold (£50) per bushel. In one instance this price was paid for a pound of salt! A drove of cattle, which some adventurer had managed to convey to the mines (of Goyaz and Matto Grosso) sold, flesh and bone together, for an ounce and a half (about £6) of gold per pound. It required all the gold which the miners could obtain to keep them in food, and even this was insufficient, for great numbers of them died from leprosy and starvation.³

At the outset the miners were the worst of characters, outlaws, renegados, and traitors. As the settlements grew up in the mining regions the character of the new comers greatly improved that of the mass. But the mining communities were always noted for their cruel treatment of the natives whom they captured only to work to death,⁴ their proneness to violence, their quickness to use the knife on all occasions, their passion for gambling, and their licentiousness.⁵

¹ Macgregor, iv. p. 144.

² London, "Statist," September 21, 1878, p. 63.

³ Macgregor, iv. p. 210.

⁴ So late as 1846 the slaves in the province of Pernambuco were treated so cruelly that, according to Mr. A. de Mornay, they cultivated the fatal vice of eating earth in order to "put an end to their already worn out existences." Macgregor, iv. p. 181.

⁵ "The fury of this tribunal (the Inquisition in Brazil) was particu-

These characteristics had scarcely become softened by time, the repression exercised by the military forces of the colonial government, and the influence of the priests, when the gold placers lost their importance, and the country fell into decay. In 1844 the arrival of three French mechanics, a carpenter, a joiner, and a blacksmith, in the province of Goyaz, was deemed so important an event as to be stated in the message of the President to the provincial assembly.¹

The currency of the country at first was gold dust,² afterwards bars of uncoined gold,³ later still, when the colonial mints⁴ became capable of supplying the country with coin, the use of dust and bullion was prohibited, for the Crown did not omit to extort a seignorage from the coin. Upon the decline of the placers the gold specie gave place to silver coins smuggled from La Plata, then to base silver coins, and finally to coppers. These were partly replaced in 1797 by

larly exerted against those who were suspected of sodomy." Raynal, ii. p. 473.

¹ Macgregor, iv. p. 210.

² Kelly's "Cambist," i. p. 291.

³ Macgregor, iv. p. 143, Beauchamp, iii. p. 388, and Kelly's "Cambist," i. p. 291. Says the latter: "The gold dust deposited in the beds of the various streams is a common right, but when found is by law bound to be carried to the royal smelting-houses (Cazas de Fundição) established in various districts, where, one-fifth of it being retained (*in natura*) for the Royal Quinto, a bar is made of the remainder, which is weighed, assayed, numbered, stamped, and returned to the owner accompanied by a certificate, signed by the proper officers, showing the value of such bar, calculated at 1,500 Reis per octave of eleven-twelfths (.9167) fine. These bars serve as a circulating medium, but it is strictly prohibited to export them. They are ultimately carried to the Royal Mint at Rio de Janeiro, where they are received at 1,500 Reis per octave, and paid for in gold coin valued at 1,600 Reis per octave; the King retaining a seignorage of $6\frac{2}{3}$ per cent., in addition to the Quinto (or 20 per cent.) previously taken on the gold dust."

⁴ Dr. Southey states that gold was first stamped by the authorities of Brazil in 1701; but in a work entitled "The Empire of Brazil," Rio de Janeiro, 1877, pp. 402-3, there are evidences that the king's fifth was paid and coinage commenced so early as 1694.

paper notes, and at a later date by a system consisting altogether of irredeemable paper. This last system exists to the present day, and it has efficiently served all the purposes of money for the progressive empire which has grown up from such rude beginnings.¹

It is now time to revert to the statistics of production. Those, for the reasons already alluded to, are far from satisfactory, except as to the gross sum derived from the placers during the first sixty years of their productiveness.

The best account, so far as it goes, of the gross sum, is afforded by that distinguished authority l'Abbé Raynal. Says this author: "It is demonstrable, *from the registers of the fleets*, that, in the space of sixty years, that is from the discovery of the mines to the year 1756, two thousand four hundred million livres (about £96,000,000) worth of gold have been brought away from Brazil."²

Upon the basis of this estimate, Mr. Danson, extending it to the year 1803, made the production, without any allowances for smuggling, equal to £136,908,800.³

But the registers of the fleets did not contain a full account of the production: for much of this found its way to market in a surreptitious manner to evade the heavy royalties, which, for all except a brief portion of the whole period of production, were fixed at 20 per cent., also the habérias or convoy duties, the seignorage of the mints and other exactions.

During the early period of the placer development, the number of vessels annually despatched from Portugal to the Brazils did not exceed twelve, but as the mines grew into importance these amounted to as many as 100. No ship was allowed to sail except with the fleets. Of these, one sailed for Rio in January, one for Bahia in February, and one for

¹ Despatch of Minister Partridge in "U. S. Monetary Commission Report," i. Appendix, p. 157.

² "History of the East and West Indies." Third ed., London, 1779. 4 vols. 8vo. vol. ii. p. 549.

³ See "Journal Stat. Soc.," xiv. p. 15: Mr. Danson's paper.

Femembuque in March, and sometimes these sailed twice a year.¹ These fleets were convoyed by men-of-war, to protect them from enemies and pirates, and for this duty there was levied a charge called *haberia*. The *haberia* was established by Spain in 1522, and consisted at first of 1 per cent. ad valorem upon the freight. It was, however, shortly afterwards raised to 5 per cent.² What the rate was in Portugal cannot be determined; but it was probably no less than the one last named.

As to the other exactions upon gold they will presently be treated more at length.

Taking into account these various exactions, and the extent to which the official returns were vitiated by the practice of evading them, the Baron von Humboldt in his "New Spain," estimated the total product of the gold placers of Brazil from 1680 to 1803 at £171,100,000. Mr. Danson, in an elaborate paper on the subject which he read before the Statistical Society of London,³ going over the same ground, and with both of these authorities before him, estimated the product from 1680 to 1803 at £184,400,000. Finally Dr. Southey, who entertaining inflated ideas of the product in certain years, committed the further error of crediting this product to whole series of years, estimated the product of the Quinto (or royal duty of one-fifth upon the production) of gold during the same period, and up to 1807, at £45,000,000;⁴ which would make the total product more than £225,000,000; undoubtedly an exaggeration.

Guided by the lump estimates of Raynal, Humboldt, and

¹ Postlethwayt's "Diet. of Com.," London, 1766. Art. "Brazil."

² Ibid. Art. "Flota." The same article alludes to the evasions practised and the mode of effecting them.

³ "Journal of the Statistical Society," vol. xiv. p. 14.

⁴ "History of Brazil," iii. p. 820. This estimate makes an allowance of one-fifth for smuggling and is called the product of the mines; not the product of the Quinto. But from the estimates of separate years in other parts of the work it is evidently the Quinto that is meant. In either case it is unreliable.

Danson, and by the accounts of the product in various years, obtained by consulting a number of authorities, whose works are referred to in the remarks and foot-notes accompanying the following table, we have ventured to estimate the annual production during all of the decades severally from 1680-89 to 1860-69, and for the eight years 1870-77.

While the scantness and uncertainty of the attainable data do not admit of any pretension to correctness in this table, so far as one particular decade or another is concerned, it is confidently believed to be entirely reliable, first, in respect to the period at which the placers of Brazil commenced to be noticeably productive, viz., about the year 1680; second, to the total sum of the product from the first to the last, and even as to the total sum in any one period consisting of not less than two or three decades; and, third, as to the period of greatest productiveness, viz., 1730 to 1750.

With this qualified assertion of its reliability, the table will now be adduced.¹

Estimated annual gold product of Brazil,^a from the period of the discovery of the placers to the present time, from a comparison of the following authorities: Raynal, Humboldt, Jacob, Danson, Mawe, Southey, and others.^b

SUMS IN MILLIONS OF POUNDS STERLING.

Decennial period.	Estimated annual production.	Total product during the decade.	Remarks.
1680-89	·2	2·0	
1690-99	·3	3·0	
1700-09	·4	4·0	
1710-19	1·0	10·0	Mawe, p. 182, gives £2,500,000 for 1713.
1720-29	2·0	20·0	

¹ For notes to the table, see Appendix to this chapter.

Decennial period.	Estimated annual production.	Total product during the decade.	Remarks.
1730-39	5·0	50·	Mawe, p. 184, gives £5,000,000 a year at this period. ^c
1740-49	3·0	30·	
	} average 4·0		
1750-59	1·5	15·	Humboldt's "Fluctuations," p. 18, gives 6,400 to 8,600 kilos for annual product of Minas Geraes alone from 1752 to 1761. ^d From 1751 to 1756 the Quinto yielded an average of £168,000 a year. From 1767 to 1776, £144,480 a year.
1760-69	1·0	10·	
	} average 1·25		
1770-79	1·0	10·	See note "e."
1780-89	1·0	10·	
1790-99	·86	8·6	Humboldt's "New Spain," says 29,900 marcs for 1800.
1800-09	·06	·6	
	} average ·46·5		
1810-19	·05	·5	Mawe gives for Minas Geraes alone in 1809, 150 arrobas.
1820-29	·04	·4	Humboldt gives £200,000.—Danson, "Stat. Journal," xiv. p. 42.
			Jacob, vii. p. 267, gives £4,000,000 for the 20 years ending 1829, or an average of £200,000 a year. }
1830-39	·04	·4	Birkmyre for 1846 gives £259,871. —MacCulloch's "Com. Dic."
1840-49	·26	2·6	
1850-59	·3	3·	Birkmyre for 1850 gives £289,068. —MacCulloch's "Com. Dic."
1860-69	·07	·7	About £700,000 in gold were coined at Rio during this decade.
1870-77	·005	·05	About £45,000 in gold were coined at the Riomint during these eight years. See "Br. Silver Com. Rep.," No. 2, p. 113.

According to this table the total product, from 1700 to 1755 inclusive, the period covered by Raynal's Statistics, was

£128,000,000; or one-third more than was shown by the registers of the fleets. From 1680 to 1803 it was £175,000,000 compared with £172,600,000 estimated by the Baron von Humboldt, and £184,400,000 estimated by Mr. Danson. The sum of this portion of our table is about $1\frac{1}{2}$ per cent. greater than Humboldt's estimate, and about 5 per cent. less than Danson's; a substantial agreement in both cases. The estimate of Dr. Southey, which is about 43 per cent. greater than our table, is rejected as excessive.

Having arrived at a more or less satisfactory result concerning the gross production of Brazilian gold, it will be interesting to compare it with that of California and Australia respectively.

From the discovery of her placers in 1670 to the present time, and including not over one-tenth from quartz mining, Brazil has probably produced more than £180,000,000 worth of gold.

From the discovery of her placers in 1818 to the present time, and including probably not over one-fifth from quartz mining,¹ California has produced about £220,000,000 worth of gold.

From the discovery of her placers in 1851 to the present time, and including probably not over one-fourth² from quartz mining, Australia has produced about £240,000,000 worth of gold.

The importance of the Brazilian gold product was therefore, other things aside, only a fourth less than that of either the Californian or Australian. When it is considered how much less gold there was in the world's stock of the precious metals at the period when Brazil threw her auriferous product into Europe than there was when

¹ Testimony of Hamilton Smith, Superintendent North Bloomfield Mine and Ditch Co., before the Legislative Mining Débris Commission, Marysville, Cal., Feb. 18, 1878.

² The proportion of the whole product of Australia deemed to have been derived from quartz mining is inferred from a general knowledge of the condition of the mining industry in that country.

California and Australia began to be productive, the importance of the Brazilian placers will be seen to have been even greater than that of the great placers of the present century.

The impositions levied by the Portuguese government upon the product of the Brazilian gold fields demand some mention in this place.

In the absence of legal authorities upon the subject, there is some uncertainty with regard to the royalties, seigniorages, convoy-duties, and other impositions (most of them of a purely feudal character) which the Portuguese monarchs levied upon the gold product of Brazil. The historical authorities accessible to the English reader have not paid that attention to the subject which its importance demands, and the most that can be hoped for with respect to this matter is substantial correctness.

First as to the *Quinto* or royal fifth on production.

From the mediæval workings of the auriferous sands at the estuary of the Tagus, the Portuguese monarchs had exacted one-half of the gold found in the lower layer or *malhada*, leaving all of the inferior quantities obtainable from the upper layer, or *medão*, to the washers, who were, however, subject to a capitation tax, the *adiceiros de malhada*, to two *corroas*, and the *adiceiros de medão* to one *corroa* per annum. After this, the king, by compelling them to sell their gold to the mint for less than its weight in coin, managed to extort something more out of them.¹

In the proportion of production thus demanded for the gold miner, there appears no likeness to the *Quinto* or fifth, which afterwards so universally constituted the tax throughout the American possessions of Spain and Portugal, and unless the *Quinto* derived its origin from the laws of classical antiquity, it must be assigned to the date of the discovery, and the contracts or conventions between the Crown of Spain and the *Conquistadores*.

¹ "Report from the Portuguese Department of Mines," printed in "U. S. Monetary Commission Report," i. Appendix, p. 458.

At all events, this was the tax imposed by the King of Portugal upon the production of gold in Brazil.

Previous to 1714 the Quinto appears to have been levied and paid pretty fairly. At that period the difficulties and excessive cost of production had become apparent. These considerations, together with the magnitude of the Quinto, which now amounted upon an average to £200,000 per annum, led to dissatisfaction among the colonists. The upshot of this was that in the year 1714 it was "commuted" by some other tax, of whose character and rate we have no account. From the nature of the subsequent commutation, made in 1730, it may be surmised to have amounted to at least one-half of the Quinto.

In 1720 the Quinto was resumed. Dr. Southey¹ says of this period that the Quinto was not half paid; but Southey, though an industrious, was not always a careful writer, and in view of the discordance of opinion on this subject, presently to be shown, and the fact that generally, and as to the whole product of the mines from beginning to end, about two-thirds of the Quinto is known to have been collected, his assertion is to be received with caution.

In 1730 the Quinto (if all paid), now amounting to upwards of £1,600,000 a year, to say nothing of the seignorage and other charges upon gold, became so great and oppressive as to lead to open insurrection; followed in the end by a compromise. This was effected by a temporary reduction of the Quinto in 1730, and in 1736 by a capitation tax of two octavas and twelve vinteims of gold per capita per annum.² The author's notes, taken some years since, fail to inform him exactly how this capitation tax was placed; but a rough calculation appended to them asserts, that the product of the imposts during both the reduction and the capitation tax was about one-half of the Quinto.

¹ "Hist. Brazil," iii. p. 266, *note*.

² *Ibid.* p. 271.

In 1751 the Quinto was renewed. The government by this time had established military posts and a system of supervision over the mines which rendered evasion difficult. The average annual product of the Quinto from 1751 to 1766 inclusive, was about £168,000, and from 1767 to 1776 about £144,480. Upon the supposition that only one-fifth of the product at these periods escaped the royalty, the annual product during the first period amounted to £1,051,000, and during the second to £903,000.

From this period the Quinto has remained unaltered up to the present day. The proportion of the product that escaped the tax continued, however, to increase; until, towards the beginning of the nineteenth century, it probably did not amount to one-half, as against one-fourth or one-fifth during the most productive periods.

The general tendency of evasions of excessive impositions is to increase in proportion as the impost grows old, and the tax-payer more familiar with the devices of evasion. At the outset almost all imposts, however excessive, are generally pretty fully met.

This tendency of an evasion of duty to increase with the lapse of time, not usually being familiar to historical writers, and each one generalizing from the facts before him covering only a limited period, has occasioned the utmost discordance of opinion with regard to the general proportion of the Quinto to the product.

Dr. Southey's opinion was, that one-half escaped taxation;¹ but he himself bears the strongest testimony to the vigilance of the Crown officials,² and the severe penalties visited upon all who attempted to evade the Quinto.³ On the other hand, he avers that the officials themselves were

¹ Southey, iii. p. 266, *note*. The present author's notes do not enable him to reconcile this with Dr. Southey's estimate of one-fifth in his "History," iii. p. 820; nor with that in iii. p. 286, where he says: "The Portuguese Court was supposed to receive a much greater revenue from its gold and its diamonds than was actually derived or could have been derived, even if no means of defrauding it had been practised."

² *Ibid.* p. 875.

³ *Ibid.* p. 45.

dishonest, and that the collectors sometimes mixed copper with the gold composing the Quinto.¹

As for the opinion of Comara, a Portuguese authority quoted by Southey,² that the Crown only got one-twentieth of its dues, it is too extravagant to merit any consideration.

Baron von Humboldt, with that more comprehensive and certain grasp of large facts which forms the distinguishing trait of his ability, estimated the evasions on the whole at one-fourth,³ and this, as we have seen, was probably not far from the truth.

The seignorage on gold exacted by the colonial mints during the first half of the eighteenth century is given by Dr. Southey at 5 per cent. ; by Kelly with greater exactness at $6\frac{2}{3}$ per cent. ;⁴ but it is possible the rate was augmented after the produce of the mines began to decline, and therefore that both authorities are correct.

The colonial mint established in 1694 was located successively at Bahia, Rio de Janeiro, and Pernambuco, finally settling at Rio in 1702, where it has remained ever since. Another mint was established at Bahia in 1714, and was in operation until 1834. A melting-house, *Caza de Fundição*, was also established in Minas Geraes in 1721. After being closed for some time, this establishment was reopened in 1825, when certain English capitalists commenced quartz mining in Brazil ; but it was closed again in 1835.

The colonial coinage previous to 1703 only amounted to about £140,000 ; from 1703 to 1833, £43,260,000 ; from 1834 to 1847, £120,000 ; and from 1847 to 1873, £8,920,000, total £52,440,000. The remainder of the product was carried chiefly in English vessels to Portugal and England, a small portion finding its way across the Rio de la Plata. With regard to the *haberia* or convoy duty, this, as before

¹ Southey, iii. p. 820, *note*.

² *Ibid.* p. 820.

³ "New Spain," iii. p. 393.

⁴ "Cambist," i. p. 291. The seignorage on silver coined at the Portuguese mints at this period was five per cent.

stated, amounted to about 5 per cent. *ad valorem* on the registered product.

As to the further imposts which the Crown of Portugal managed to extort from this product through its colonial policy, a policy whereby the gold miners were obliged to pay customs duties upon the food, clothing, tools, and other supplies needed for the prosecution of their industry, and to suffer other exactions—these may be passed over as subjects too remote from the main topic of this work to merit further consideration.

Another matter in this connection appears, however, to deserve mention here. The gold product of Brazil gave rise to a measure which, to this day, exercises an important bearing upon commercial affairs. In 1688 Portugal, through her coinage laws, arbitrarily changed the ratio of silver to gold in her dominions to 16 for 1, and although this at the time was an over-valuation of gold, yet from the subsequent magnitude of her gold coinages, it tended to effect a similar change in the coinage laws of the entire commercial world. In 1747, relying upon the continued prolific yield of her Brazilian placers, Portugal entirely demonetized silver, and entered upon that policy of a single gold standard which England afterwards copied from her, and which, through the prominence of England as a commercial nation, has come to exercise a potent influence upon the destinies of the world.¹

¹ For further mention and consideration of these measures, see the author's "History of Money."

APPENDIX TO CHAPTER XVI.

NOTES TO TABLE ON GOLD PRODUCT OF BRAZIL.

^a Placer of Jaragua in San Paulo opened before 1670; placer of San Sabara in Minas Geraes opened 1670; of Villa Rica in Minas Geraes opened 1701 (Southey, iii. p. 56); of Villa do Príncipe opened 1715 (Mawe, p. 222); of Matto Grosso, 1718 (Macgregor, iv. p. 142); Goyaz opened by the Paulistas about 1694; an improved route to its placers opened 1736 (Macgregor, iv. p. 142); an improved route by the Amazon *via* the Tiete, into the province of Matto Grosso, 1746 (Macgregor, iv. p. 142.)

^b The other authorities consulted were the "Budget du Brésil," par le Comte Auguste van der Straten-Ponthoz, Bruxelles, 1854; "History of Brazil," by John Armitage, London, 1836; "Histoire du Brésil," par M. Alphonse de Beauchamp, Paris, 1815; "Rio Grande do Sul," by Michael G. Mulhall, London, 1873; the "Commercial Relations of the United States, 1853 to 1878," and the "Reports of H. B. M. Secretaries of Legation and Consuls on the Finances of Brazil," &c.

^c Although all writers agree upon the period 1730-50 as the most prolific, there is evidently exaggeration in some of the accounts. Mawe gives £5,000,000 a year during the decade 1730-39, and £4,000,000 a year during the following decade. Now while £5,000,000 were doubtless obtained during some of the years of this period, and £4,000,000 a year in others, the continuance of these figures throughout all the years of the decades to which they respectively allude is evidently an exaggeration. Beauchamp, "Histoire du Brésil," iii. p. 436, says the maximum yield occurred 1730 to 1750, and the king's fifth amounted in some years to twenty-five million livres. Southey, on the hypothesis that only one-half of the tax was paid, gives £10,000,000 to £12,000,000 for 1730 (vol. iii. p. 266, *note*); but these sums are preposterous. So also is the estimate of £4,000,000 for 1753, for Minas Geraes (alone) in vol. iii. p. 592, where he calls this the "Golden Age of Portugal," an inference which, if derived from the product of the mines, does not agree with his vastly higher estimate for the year 1730. On the other hand, Humboldt's "New Spain," iii. p. 408, only allows £800,000 a year from 1748 to 1753. This is equally unreasonable, as is shown by the receipts of the Quinto. In his later work, "The Fluctuations," Humboldt corrects this error by stating that the estimate relates to Minas Geraes only. The falling off from the middle of the last to the early part of the present century is illustrated by the following stray

items of the receipts of Quinto by the government. Villa Boa in 1753, 169,080 octavas; in 1807, 12,000 octavas, or only one-fourteenth as much as half a century previously. San Felis in 1755, 59,569 octavas, in 1805, 3,308 octavas, or only one-twentieth as much.

^d This, at £110 per kilo would equal £704,000 to £946,000 per annum for this province only. On p. 22 of the same work the illustrious author gives £1,180,000 as the product of Minas Geraes "in the richest years of the flourishing period 1752 to 1761," evidently a discrepancy; probably due to the influence of the partial returns afterwards published by the British Bullion Committee.

^e Says Raynal, ii. p. 529, "Estimating by the King's Fifth the annual supply of gold from Brazil (about 1775) is 3,000,000 livres. To this ought to be added one-eighth for evasion." This would make the product at that period only £135,000 a year: an impossibility. At the period mentioned the Quinto had ceased to be even an approximately correct guide. It had been recently restored after occasioning an insurrection, and after having been commuted by another form of tax which hardly amounted to a tenth of the product.

^f The product seems to fall too suddenly from the decade 1790-99 to the decade 1800-9, and yet Humboldt's figures for the year 1800, which he appears to regard as representing the usual annual product at about that period, cannot be disregarded, although Jacob regards them for Brazil as "no safe guide." Perhaps the difficulty is best reconciled by adopting Dr. Kelly's figures. He says ("Cambist," i. p. 291) that "formerly" (he is writing in 1821) "the annual product was about 300 arrobas, worth about £500,000; but it is supposed of late years to have diminished." It probably fell gradually from about £1,000,000 a year in 1770 to about £50,000 a year in 1809, the annual average of the forty years being about £730,000, and of the last half or twenty years thereof about £460,000. In support of this view the following figures are adduced from Jacob's "History of the Precious Metals," ii. p. 395, as quoted from appendix No. 22 to the Report of the Bullion Committee of 1810. Mr. Jacob calls them "product of the tax, Quinto, or the fifth of the gold from Minas Geraes in Brazil, for each year, from 1752 to 1795, in periods of six years;" but it is obvious that they represent not merely the Quinto, but the whole product upon which the Quinto was paid. Omitting fractions of an arroba and reckoning £2,000 to the arroba the quantities reported as produced and the approximate equivalent of the same in pounds sterling were as follows:—

Period.	Annual product during the period. Arrobas.	Approximate valuation, gold coin.
1752 to 1757	659	£1,318,000
1758 to 1765	611	1,222,200
1766 to 1771	512	1,024,000
1772 to 1777	448	896,000
1778 to 1783	396	792,000
1784 to 1789	274	548,000
1790 to 1795	268	536,000

It is evidently these figures which Mr. Phillips ("Hist. Mining") saw when he spoke of the period 1752 to 1761 as the most prolific of the Brazilian mines. Had he been able to look behind them a decade or two, his opinion would have been a very different one. Humboldt also appears to have had the same figures before him.

CHAPTER XVII.

JAPAN.

Enormous treasure obtained from Japan—Parallel between the inhabitants of New Spain and Japan—Many circumstances common to both—The principal differences consisted in the American belief in a coming Messiah and the Japanese's familiarity with horses and steel weapons—The precious metals in Japan—Operations of the Portuguese to acquire them—The means employed—Slavery, priestcraft, and intrigue—Penance and indulgences—Introduction of the Catholic Inquisition—Sedition and civil war—Plot to overthrow the native government—The plot discovered and the Portuguese banished from the country—Closure of the ports for over two centuries—Curious memorial of a Japanese Finance Minister to his government.

THAT during the seventeenth century, and chiefly during the first half thereof, Europe obtained from Japan so great a sum in the precious metals as one hundred millions sterling, is a statement that will probably be received with surprise, for it is not to be found in familiar histories. Yet there is no room to doubt its truth. It is supported by the testimony of both Japanese and European writers.

According to Sir Stamford Raffles, the historians Martin and Griffis, Mr. Consul Plunkett, and the other authorities and testimony adduced hereinafter, the Portuguese and Dutch managed to obtain from Japan, during their intercourse with that country, the following sums of the precious metals.

Estimate of the amount of the precious metals obtained by Europeans from Japan, based on the total sums mentioned by Griffis ("Mikado's Empire," p. 602) and the details by years, of portions exported from Nangasaki, as shown in Martin ("History of China," vol. i. p. 292):—

PORTION OBTAINED BY THE PORTUGUESE.

(Based on total sums by Griffis, and details at intervals by Sir Stamford Raffles in his "History of Java.")

Silver and Gold together.¹

1545 to 1598	53 years	£6,000,000	
1598 to 1624	26 years	54,000,000	
		<hr/>	£60,000,000

PORTION OBTAINED BY THE DUTCH.

Gold.

1611 to 1646	35 years	£9,400,000	
1646 to 1706	60 years	4,600,000	
1706 to 1840	134 years	1,000,000	
		<hr/>	£15,000,000

Silver.

1611 to 1646		£19,000,000	
1646 to 1706	(In 1671 the export of silver was prohibited)	9,200,000	
1706 to 1840	(Very little after 1710)	200,000	
		<hr/>	£28,400,000
		<hr/>	£103,400,000

¹ According to this table the annual exports of the precious metals by the Portuguese up to 1598 scarcely exceeded £100,000 a year; while from 1598 to 1624 they averaged more than £2,000,000 a year. Raffles puts them at first at about ten million florins, say, £800,000 a year, and afterwards at less.

In another place he states the earlier exports to have been at the rate of £1,000,000 sterling a year. He must have alluded in both cases to silver only. Voltaire (Works, Smollett's translation, iv. 158) says that according to the greatly exaggerated accounts of the Dutch the Portuguese took 300 "tons" of gold a year from Japan in "early times," and explains that the ton was a name for 100,000 florins, or, say £8,000. Postlethwayte's "Dic. of Com.," ed. 1766, art. "China," says that a chest

The circumstances under which this treasure was obtained are not only similar to those which attended the drain of treasure from Spanish America, they are connected with them in other ways. Columbus' memorable voyage across the western ocean was to discover this very Japan which Polo had described two centuries before, and which Pinto was to stumble upon half a century later. The object of the adventurers who followed in the wake of Columbus to America, and in that of Pinto to Japan, was the same—to obtain from the inhabitants of those countries their accumulations, and from their mines, supplies of the precious metals. The internal condition of New Spain, and of Japan, at the period of the arrival of the strangers was much alike, and from the few respects in which they differed we gather a world of historical meaning.

The first arrivals of Europeans in Japan were those of two Portuguese who were wrecked on the coast in 1542. In 1545 Mendez Pinto, a Portuguese adventurer and a pirate, was driven to Japan by stress of weather. Within a year after this event, and attracted by the glowing reports which Pinto had carried to Ningpo (in China) of the great wealth and magnificence of Japan, the Portuguese at Ningpo fitted out nine ships to trade with or conquer the newly-found islands, as opportunity offered. Of these vessels only one survived the perils of the voyage, and the intention to piratically conquer Japan was necessarily abandoned. The voyage was, however, not without important fruits. The Portuguese fell to trading with the natives, and the profits were so great—amounting to 1,200 per cent. upon the value of their cargo, the avails of which they carried to Ningpo in gold—that upon their return new expeditions

of silver was 1,000 taels, and that 600,000 taels, say £160,000, equalled 21 Dutch “tons” of gold, which is about the same thing. This would make 300 tons equal to, say £2,400,000. On the whole it would appear that of the Portuguese exports, probably two-thirds (of value) were in silver, and that the heaviest shipments were made during the half-century preceding the expulsion of the Portuguese in 1624.

were fitted out, and Japan was opened to the commerce of the world.

In outward appearance the natives of New Spain (that is to say, Mexico, Central America, the Isthmus, and the northern and western shores of South America) and those of Japan bore at that period no little resemblance to one another. They were of dark visage, short of stature, lightly clad, brave in action, intelligent, amiable, and, as their visitors regarded them, partially civilized, though we of to-day may well doubt if in this respect they fell a whit behind their visitors. The condition of society in Mexico, Peru, &c., and in Japan was much the same. All these countries were in a feudal state, and it was owing to this circumstance that Cortes was enabled to make allies of the Tlascalans, Pizarro to divide the rival Incas, and Xavier to make a dupe of Bingo.¹

Both the Mexicans, Peruvians, &c., and the Japanese were ignorant of the use of firearms.

The character of their European visitors was the same. Cortes and his desperate followers had stolen away from Havanna without authority, and as a band of pirates. Pizarro was a pirate who set forth to discover and ravage Peru solely for profit, and to this end had associated himself with Pedrarias, De Luque, and Almagro, as a co-partner, to whom was due so much of the expected spoil. Pinto was on board of a Chinese corsair when he was driven into Japan. The subsequent expedition from Ningpo was of a piratical character, and but for the loss of eight of its ships, its promoters might with rude hands have at once grasped those riches for which, in the end, they were content to trade and intrigue.

But here the parallel ceases. The Mexicans believed in a Messiah, and when Cortes craftily announced himself as the emissary of this heavenly personage, Montezuma was

¹ Bingo was a Japanese daimio whom the Portuguese converted to Christianity, and whom they employed to betray and enslave his countrymen in order to further the sordid aims of the strangers.

credulous enough to believe him, to yield him possession of his person, and to advise his people to surrender themselves to the strangers. The Japanese being Buddhists looked for no Messiah, and in the self-reliance of an ancient creed regarded the strangers more with disdain than fear.

The Aztecs looked upon the Spaniards as children of heaven: the Japanese treated the Portuguese as a parcel of barbarians, shrewd and acquainted with many useful arts, but not at all to be held in reverence.

The Spaniards appeared off the shores of America in white-sailed ships, the like of which the natives had never seen before. The Portuguese visited Japan in Chinese junks, with whose appearance the natives were quite familiar. The Spaniards landed in America with horses, animals whose wonderful strength and speed rendered them a greater source of dread to the natives than their masters. The Portuguese carried no horses to Japan; nor, had they done so, would they have created any surprise, for the horse was common in that country. The most formidable weapon possessed by the Mexicans and Peruvians was a wooden club, studded with flints. The Japanese, on the contrary, were as well acquainted with iron and steel as their visitors; and whereas the latter carried each a sword about their persons, the former carried two.

The features of resemblance between the Indios and Japanese, which most nearly concerned their future relations with the Europeans, were their common feudal condition and lack of firearms. The features of dissimilarity were, first, the American belief in a Messiah, and the familiarity of the Japanese with horses and steel weapons. But for the superiority of the Japanese over the Americans in these respects there is little reason to doubt that the fate of Mexico and Peru would have also been that of Japan—to fall beneath the arms of a few marauders whose single purpose was the acquisition of gold, no matter at what cost of life, or of lingering misery in the vast and hideous subterranean prisons which they called mines.

At the period of the arrival of the Portuguese in Japan the currency of the country consisted of rice for agricultural rents, public taxes, and many other kinds of payments; and iron or copper senni or zenni,¹ or both, issued by the Shogun.²

Nevertheless, although not money in mediæval Japan, yet the worth and convenience of the precious metals rendered them most desirable for the purpose of representing and amassing wealth, and it seems to be pretty well established from the narratives of Marco Polo in the thirteenth, and Mendez Pinto in the sixteenth century, and the ease with which the first foreigners were enabled to obtain returns in silver and gold for their cargoes, that at the time of their arrival these metals existed in Japan in considerable quantities. It is probable that the Shogun, and perhaps also the Mikado, as well as each of the great daimios, possessed a reserve of these metals, chiefly gold, in slugs or rude hammered forms. After the arrival of the Portuguese these slugs were coined into kobangs, boos, &c., and exchanged for European weapons, dress-stuffs, medicinal drugs, and other commodities. It was when this stock gave signs of becoming exhausted that the Portuguese entered upon those transactions which, upon being exposed, led to their expulsion from the country, and its virtual closure to the world for more than two centuries.

These operations first assumed importance during the shogunate of Iyéyasû (posthumous title, Gongen or Gangin), which began in the year 1603. They consisted first of winning over Gongen and many of the great daimios to the project of opening the native mines of gold and silver, and of working them with their own subjects, who were to be condemned as slaves for this purpose; and next, of obtaining

¹ The smallest of coins, once probably numeraries, now intrinsic.

² Better known to Europeans as the Tycoon, or secular Emperor. It seems, however, that the Mikado was always the sole Emperor, and that the Tycoon was merely a powerful lord who had usurped some of the Imperial functions. The Shogunate was overthrown in 1868.

the metals thus produced from their owners by means of ecclesiastical dues, penances, and indulgences. The instruments of this vile scheme were slavery and priestcraft, both of which the Portuguese were the first to introduce into Japan.

Says Griffis: "The arrival of these foreigners was the seed of troubles innumerable. The crop was priesthood of the worst type, political intrigue, religious persecution, the inquisition, the slave trade, the propagation of Christianity by the sword, sedition, rebellion, and civil war."¹ Elsewhere he says: "All foreigners, especially Portuguese, then, were slave-traders; and thousands of Japanese were bought and sold and shipped to Macao in China and to the Philippines. . . . Even the Malay and negro servants of the Portuguese speculated in the bodies of Japanese slaves, who were bought and sold and transported. . . . Such a picture of foreign influence and of Christianity, which is here drawn in mild colours, as the Japanese saw it, was not calculated to make a permanently favourable impression on their minds."²

In another place he states that Okubo, a Christian convert and Governor of Sado, promised by the priests, in view of the treasonable plot of 1611, to be made hereditary Emperor of Japan, and a mere catspaw in their deeper design connected with the abstraction of the precious metals, had thousands of other "Christian converts" his countrymen working for him in the mines of the province over which he ruled, and was about to betray.³

The lowest servitude known to the Japanese before the arrival of Europeans was a mild form of feudal villeinage, which kept the peasant in his own province and at work in the fields. Religion sat lightly upon these happy islanders, and the bonzes were rather their welcome companions than their gloomy masters and inquisitors. The Portuguese changed all this: they converted villeinage into chattel

¹ "Mikado's Empire," p. 248.

² *Ibid.* p. 254.

³ *Ibid.* p. 256.

slavery, and religion into an instrument of torture and oppression. The Jesuits acquired control over the natives by preaching a religion artfully filled with liberal promises for all classes. This they called Christianity: it was in reality mere demagoguery, which was propagated the more readily by employing the forms and paraphernalia of the religion it was designed to supplant. "The very idols of Buddha served, after a little alteration with the chisel, for images of Christ."¹ When these devices failed others were resorted to. "Fire and sword, as well as preaching, were employed as instruments of conversion."² By these and other means they rapidly made a million of "communicants," including many of the daimios, military leaders, officers of the fleet, and other persons of influence, and at the head of these communicants placed themselves.

Through the control thus obtained they induced the "Christianized" daimios to consign their vassals to the mines, where thousands of them miserably perished, though not before they had extracted for the benefit of the instigators of this tyranny and their countrymen and abettors, the Portuguese traders, those vast sums of treasure which were shipped to Europe.³ A large portion of these sums was obtained directly by the priests, and under the pretence of releasing the souls of the natives and of their ancestors from a purgatory which they themselves (the priests) had invented.⁴

These measures could not long be practised upon so intelligent a race as the Japanese without exciting suspicion of their true character; but the country, notwithstanding its numerous mines, was poor;⁵ the people were separated into feuds, and the daimios longed for those European luxuries which the foreigners offered them in exchange for a metal

¹ "Mikado's Empire," p. 252.

² Ibid. 253.

³ Martin's "History of China," i. 292.

⁴ "The poor natives at home often pawned or sold themselves as slaves to the Spaniards and Portuguese," Griffis, 244.

⁵ Ibid. 573.

whose only cost to them was the sweat and blood of their vassals.

Nevertheless a reckoning day came at last. In 1611 the Portuguese were convicted, by documentary proof, of a design to seize the Shogun and enthrone a usurper, one of their creatures, in his place; whereupon the Shogun made war upon them and their native allies, until in 1615 they were defeated, and in 1624 every Portuguese was banished the land.

In this war, the last in which, until very recently, the Japanese have been engaged, more than one hundred thousand lives were sacrificed.¹

The Dutch had arrived in Japan previous to these occurrences, their first voyage having been made in the year 1600. Up to the outbreak of the war against the Portuguese the former had acquired but little influence, and accomplished but little trade with the natives. Actuated by jealousy of the latter, a jealousy which was sharpened by sectarian and patriotic hatred, for the Dutch were Protestants and Holland was a rebellious province of Spain,² they opened the eyes of the Japanese to the arts of the Portuguese, and thus became the cause of their expulsion.

The Dutch trade commenced from the time when Iyéyasū declared war upon the Portuguese and their adherents, viz., in 1611. From 1624 to 1853 the Dutch were the only Europeans permitted to trade with Japan, and from 1639 they were confined to an island (Deshima) near the port of Nangasaki, limited to a few vessels a year, and restricted in their intercourse with the natives by the most exacting and insulting regulations. For the sake of the enormous

¹ Griffis, p. 256.

² In 1555 the crown of the Netherlands was inherited by Philip II. of Spain, who soon after his accession commenced those persecutions which eventually resulted in the freedom of the Low Countries. In 1567 Alva was sent to Holland; in 1598 the crown fell to Philip III. of Spain and Portugal (Portugal belonged to the Spanish crown from 1580 to 1640), and thus at the period of the arrival of the Dutch in Japan both Holland and Portugal belonged to Spain.

profits which the trade yielded at first, they bore these conditions with fortitude, and for their reward managed to obtain more than £40,000,000 of the precious metals from Japan. Very little of this was procured before 1640, and only £1,200,000 after 1706, when through the medium of the artificial prices (in zenni) fixed by the Japanese upon their merchandise and the precious metals, the trade became unprofitable. This trade was active, therefore, during about sixty-six years, and yielded of the precious metals, on the average, about £650,000 per year.

The Japanese were probably moved to this policy of restriction by the desire of terminating that slavery of the mines which had been greatly extended, if not indeed at first introduced by the Portuguese; but in carrying it out the feudal state of the country, and respect for its powerful lords, obliged the native statesmen to assign a different reason in its behalf. This was the fear of exhausting the deposits of the precious metals. Says a memorial of the period: "A thousand years ago, gold, silver, and copper were unknown in Japan, yet there was no lack of necessities. The earth was fertile, and this produced the best sort of wealth. Gangin¹ was the first prince who caused the mines to be diligently worked, and during his reign so great a quantity of gold and silver was extracted from them as no one could have formed any conception of, and since these metals resemble the bones of the human body, inasmuch as what is once extracted from the earth is not reproduced, if the mines continue to be thus wrought in less than a thousand years they will be exhausted.

"Since these metals were discovered the heart of man has become more and more depraved. With the exception of medicines (European drugs) we can dispense with everything that is brought to us from abroad. The stuffs (cloths)

¹ This was either, as previously stated, the Shogun Iyēyasū, who was entitled "Shoichi i Tō shō Dai *Gongen*," or his son Hidētada. The regnal period of the first was 1603-4, and of the second 1605-22. Griffiths, pp. 273 and 285.

and other articles are of no real benefit to us. If we squander our treasure in exchange for them what shall we subsist upon? Let the successors of Gangin reflect upon this matter, and the wealth of Japan will last as long as the heavens and the earth.”¹

¹ Memorial presented to the government of the Shogun by a Japanese Finance Minister in 1710, quoted in Martin's "China," i. 292.

CHAPTER XVIII.

THE SPANISH-AMERICAN REVOLUTION.

Feudalism the conservator of specie-money systems—Modern freedom and bank notes developed together—The Napoleonic Empire the conservator of the legitimate fruits of the French revolution against the feudal system—Bank of France—The development of the bank note system opportunely made good the scarcity of specie occasioned by the Spanish-American revolution—This event caused by the revolution in France and the French invasion of Spain—The injury thus indirectly caused to the mines by the French revolution was repaired by the extension, to which it gave rise, of the bank-note system—Effects on the mines of fourteen years of civil war—Desertion of mining towns and localities—Abandonment of local agriculture—Neglect and ruin of farm buildings and implements—Sinking down of the mines—They are choked by débris—Filled with water—Destruction of machinery—Mischievous work of the *buscones*—Withdrawal of capital from the mines—Permanent blow to production—Immediate effects—Produce of mining reduced nearly one-half—Diminution of the world's stock of precious metals—Development of the bank-note system—Beginning of free mining.

THE feudal system was the especial conservator of “species” or metallic money, and whenever and so long as that system lasted, all extensions of the monetary circulation by means of bank notes or any substitute for specie were rendered impossible. When these devices were employed by the Italian cities they were free: when banks of issue were established in Catalonia, Switzerland, Holland, England, &c., those countries had removed their feudal yokes: when France arose in turn to throw off this weight, which in that country had attained unusual and crushing proportions, her long smothered resentment overleaped its legitimate bounds, and the freedom of the revolution quickly degenerated into licence and the intolerable rule of a mob. It was in harmony with these social changes

that in that country money was represented by the illimitable assignat and mandat.¹

The Empire of Napoleon was at once a protest against the *ancienne régime* and a premature republic in France. It was the conservator of all the legitimate fruits of the revolution, and marked not only the termination of feudalism in France, but also its termination throughout Europe generally. For the suppression of the feudal system at its centre did not fail to evoke the resistance of surrounding countries, and to bring about those wars which a narrower view of events has attributed too exclusively to the personal ambition of Napoleon. Wherever the French arms prevailed, and the feudal system was swept away, monetary systems were changed to conform to the new order of affairs. Banks were chartered in nearly every country of Europe,² and promissory notes for the first time became an essential portion of the circulation. But for this timely and general introduction of an acceptable substitute for specie, it would be difficult to estimate the calamitous consequences which would have followed the stoppage of the Mexican supplies of silver that took place upon the breaking out of the Spanish American revolution in 1810. Even as it was, these consequences were of a magnitude that seriously threatened the march of European civilization.

The French revolution and the consequent invasion of Spain by the French imperial army were the immediate causes of the overthrow of the royal government in New

¹ The assignat was at first a communal note, bearing interest and payable in the forfeited lands of the emigrants or condemned nobles. It was decreed legal tender by the Republic, and thus became a numerary whose value was independent of the influence of either interest or land, and depended solely on the quantity of notes emitted.

The emissions becoming excessive and the notes extensively counterfeited, their value fell to a mere nothing.

The mandat, a subsequent form of note, was payable in, and formed a claim upon, particular lands at fixed prices; but being also issued in excessive quantities, and being also widely counterfeited, it fell in value like its predecessor, until it became worthless.

² The present Bank of France was chartered in 1803.

Spain ; thus the very events which led to the closure of the American mines had provided beforehand the only mitigation that the times rendered practical for the evils which that closure was about to entail upon the world. The French Revolution and the Empire were about to stop the supplies of silver from America ; but they had already provided a partial substitute for it in the bank-note systems which they had made possible in Europe.

The news of the invasion of Spain, and the proclamation of Joseph Bonaparte as King, was received with great indignation by the Spaniards in the American colonies, and regarded with pleasure by the natives, to whom it held out hopes of liberty. Up to this period the former had monopolized the public offices and enjoyed every privilege in the colonies ; the latter, when they were not held in actual slavery, had been treated as inferiors. Education was forbidden to them ; they were not allowed to cultivate flax, hemp, saffron, the olive, the vine, or the mulberry ; nor to manufacture any article which could be supplied by the mother country. For a long time foreign trade had been prohibited on pain of death. Taxation had always been kept at a point which rendered it but an euphemism for slavery ; justice was corrupt, partial, and venal ; life itself hung upon the words of men, who, to their self-assumed title of Spanish *hidalgo*, could add none of the virtues which that title represents.

Aware of the discontent generated by this state of affairs, the viceroy, Don Jose Iturrigaray, upon hearing of the ominous change which had taken place in Spain, sought to conciliate the Mexicans by affording them an opportunity to take part in the administration of colonial affairs. This wise and generous scheme was thwarted by the Spaniards, who seized the viceroy in his own palace and sent him a prisoner to Spain. This proceeding and the conduct of the new viceroy, Venegas, who brought from Spain¹ rewards and

¹ The royalists in Spain had demurred to the authority of Joseph Bonaparte and organized a National Regency. This was followed by a

distinctions for the leaders of the revolt against his predecessor, and who persecuted those who had supported the plan of admitting Mexicans to the vice-regal council, alienated and incensed the natives.

In September, 1810, a revolt broke out in the province of Guanajuato, headed by a priest, Don Miguel Hidalgo, who possessed considerable talent and had much influence with the native population. This revolt was the beginning of the Spanish American revolution, which having swept through Mexico eventually liberated every state of Spanish America.¹

This liberation was, however, not accomplished for many years—in Mexico, for example, not until 1824—and during this time the mines of the country became the prey of neglect and vandalism. Among the first consequences of the civil war upon the mines was the desertion of the mining towns and localities; the inhabitants preferring for greater security to live in the larger and better settled towns, and in districts where supplies of food and other necessities were more to be depended upon. Mr. Ward alludes to this depopulation of the mining towns with reference to the unreasonable expectations of the Anglo-Mexican mining adventurers of 1825. He says: “No allowances were made for the moral, as well as physical effects of fourteen years of civil war: the dispersion of the most valuable portion of the mining labourers; the deterioration of landed property; the destruction of stock; and the difficulty of reorganizing a branch of industry so extensive in all its ramifications as mining, and so dependent upon other branches not immediately connected with the mines themselves, and consequently not under the

second Regency which assembled in the Isla de Leon in September, 1810, and was declared by the Cortes, “the only legitimate source of power during the captivity of the sovereign.” “Mexico in 1827,” i. 125, by H. G. Ward. London, 1828.

¹ In point of fact the flame broke out in Venezuela some months before it did in Mexico. See Ward's “Mexico,” i. 134, a work in which this great political event is portrayed with admirable brevity, clearness, and impartiality.

control of their directors. All this was to be effected, too, in a country in many parts of which it was necessary to create a population before a single step could be taken towards repairing the ruin which the revolution had occasioned. And yet nine-tenths of those who engaged in the arduous task did so under the conviction that *water* was the only obstacle which they had to overcome, and that the possibility of surmounting this by aid of English machinery, was unquestionable.”¹

The desertion of the mining districts was followed by the abandonment of agriculture in their vicinity, the neglect and ruin of farm dwellings, and the destruction of farming implements, stock, &c., so that no resumption of mining could possibly occur, however peaceful a turn political affairs might take, or however well preserved the mines might be, short of several years. However, neither of these favourable conditions happened. The civil war went on and the mines were abandoned to the elements, the *buscone*, and the bandit.

Vein mines have a constant tendency to sag, cave in, and fill up with rock and earth, and this is especially the case in countries like Mexico, where perturbations of the earth's crust are of common occurrence. Even without these, the danger of caving is very great, and it can only be averted by incessant watchfulness and continual repairs.

At Virginia city, Nevada, a mining town built directly upon the great Comstock lode, there are places where from the operations of the miners beneath, the surface of the ground has sunk many feet, and in one instance an entire house was engulfed in the “cave.” In the galleries of the lode below, though these are supported by the most massive timbers, the signs of overwhelming pressure, twisting, distortion, and sagging, meet the eye on all sides. The shafts have frequently to be re-excavated and re-timbered, and the lines of partition between adjoining properties are so prone to shift, that they require to be frequently surveyed and re-located.

¹ Ward's “Mexico,” ii. 75.

All these circumstances occurred in the silver mines of Mexico. The galleries not only became distorted from perturbations of the earth and the pressure of the incumbent masses of rock; they caved in and were choked with débris. Being now entirely neglected, many of them became filled with water, and, except in some instances where the excavations had been tapped by adits or tunnels at low levels, so as to afford a free drainage for the water, were rendered entirely unapproachable and unworkable.¹

Coincident with these processes of destruction occurred the rotting, rusting, and ruin of machinery. According to Mr. Ward, this was all destroyed during the war, and "it became necessary to erect anew horse-whims (*malacates*), magazines, stamps, crushing-mills (*arastres*), and washing-vats; to purchase hundreds of horses for the drainage of each mine, and mules for the conveyance of the ore from the mine to the haciendas, where the process of reduction is carried on; to make roads in order to facilitate the communication between them; to wall in the patios or courts in which amalgamation is at last effected; and to construct water-wheels, wherever water-power could be applied."²

The mines, however, were not entirely abandoned during the civil war. A few of them in favourable locations were not disturbed at all, and were worked as usual; others were worked by the peasants, who crept into the deserted galleries and gleaned from their upper and more accessible levels such remains of ores as the proprietors had not deemed it worth while to remove, or such as had served as pillars to support the excavation. These peasants were called *buscones*, i.e., searchers or gleaners. The mines also became the hiding-place and refuge for tramps, bandits, and others, who in common with the *buscones* played such

¹ "In other (mining districts) water was allowed to accumulate to an immense extent in consequence of the suspension of the usual labours." Ward, ii. 56, 119.

² Ibid. 86.

havoc with the works, as to still further unfit them for a return to systematic mining.¹

But perhaps the most serious, because the most permanent, source of misfortune to the mining industry of Mexico was the removal of the large capitals which had formerly been invested in its prosecution. Some classes of theorists and politicians have supposed that capital has but little to do with the progress of mining; but practical men, and others who are familiar with the requirements of mining countries, have abundant reason to believe otherwise. For example, there is not a single mine on the Comstock lode which is to-day paying dividends; yet, through the power of capital, the workings continue, thousands of miners are employed, and perhaps before long some new ore body will be found to cover the hazardous outlay, and reward the adventurers.

If this capital were withdrawn the mines would have to be abandoned, for the fruit of the present outlay may not appear, if at all, for months or years, and the unaided miner could not afford to wait for it. The withdrawal of capital from the Mexican mines is frequently alluded to by Mr. Ward as the principal cause of their abandonment and destruction.

“This was the real evil of the revolution. It was not the destruction of the *matériel* of the mines, however severe the loss, that could have prevented them from recovering the shock, as soon as the first fury of the civil war had subsided; but the want of confidence, and the constant risk to which capitals were exposed, which, from being in so very tangible a shape, were peculiarly objects of attraction to all parties, led to the gradual dissolution of a system which it

¹ Mr. Ward, in alluding to the depredations committed by the *buscones*, says they were still at work in many mining districts of Mexico when he visited them in 1827, and that he could not help believing that they managed during the civil war to raise as much as £1,000,000 a year, in addition to the £1,200,000 obtained from regular mining. Ward's “Mexico,” ii. 21, 23, 24.

had required three centuries to bring to the state of perfection in which it existed at the commencement of the War of Independence.”¹

The accounts of the mineral riches of Mexico given by Baron von Humboldt in his celebrated essay on New Spain, so excited the enterprise of British capitalists that after the close of the civil war a vast capital was invested in the mines,² and half the population of Cornwall³ was sent to reopen them; yet the previous destruction had been so great that several years after these new aids had begun to be applied to them, a careful observer regarded the works as nothing in comparison with what must formerly have existed.⁴

The remarks here applied to Mexico alone may with equal propriety be applied to the rest of Spanish America. The withdrawal of capital from the mines, the depopulation of mining districts, the neglect of those industries, agricultural and other, upon which the successful working of the mines depended, the abandonment of the works and machinery to the elements, the vandal, and the thief, were common throughout the whole of Central and South America; and such were the consequences of these events that it may confidently be predicted that New Spain will never again produce so great a quantity of the precious metals as she did before the revolution.

The immediate effect of these circumstances was very decided, and full of important consequences to the world. Taking Mexico by itself the production from 1796 to 1810 inclusive amounted to an annual average of £4,800,000,⁵ of which about five per cent. was gold, the remainder silver. From 1811 to 1825 the production fell to an annual average of less than £2,200,000,⁶ of which about eight and

¹ Ward's "Mexico," ii. 56, 57, 116, &c. See also Jacob, chap. xxv.

² For a particular account of the capital thus invested see Ward, ii. 64, *et seq.*

³ Mr. Ward's expression, ii. 76.

⁴ Ward, ii. 73.

⁵ Ibid. 38.

⁶ Ibid. 23.

a-half per cent. was gold, the remainder silver. In 1826 the production did not exceed £1,600,000;¹ in 1829 it was still less.² By the year 1842 it had again risen to about £4,600,000,³ and during the five years ending with 1875 it averaged £4,500,000 a year.⁴

Even if the view be extended to the whole of Spanish America, including Mexico, the decline in the production of the precious metals was hardly less pronounced. Previous to the revolution the average annual produce of gold and silver—chiefly the latter—amounted to £7,200,000.⁵ From this sum it fell during the revolution, that is to say, from 1810 to 1825, to £5,000,000,⁶ and in 1829, which seems to have been the lowest point of the depression, it probably did not exceed £4,000,000.⁷

The significance of this decline in production will be better understood when it is remembered that before the produce of the Russian gold mines began to be important (in 1841 they amounted for the first time to so much as £1,000,000 a year) the silver mines of Spanish America constituted the principal, almost the only source from which, for a long period, the European world had been accustomed to derive its supplies of the precious metals.

With the falling off of the customary supplies began a diminution of the European stock of specie, which, it is estimated, fell from £380,000,000 in 1809, to £313,000,000 in 1829.⁸ The civilized world was thus threatened with a

¹ Ward's "Mexico," ii. 37.

² Jacob, vol. ii. p. 238, allows £2,300,000 for each of the years 1826 and 1827, and £2,400,000 each for 1829 and 1830; but, as he himself admits, these estimates were in advance, and based on very imperfect data. The lower figure is probably more correct.

³ Thompson's "Recollections of Mexico," p. 203, quoted in De Bow's "Resources," i. 294.

⁴ "Report U.S. Monetary Commission," Appendix, p. 383.

⁵ Phillips on "Mining."

⁶ De Bow's "Resources," i. 294.

⁷ Jacob, vol. ii. p. 267, and elsewhere throughout his xxvth chapter, where the details by countries and the dilapidated condition of the mines are described.

⁸ Jacob, "Hist. Prec. Met.," vol. ii. p. 327. In this calculation Mr. Jacob

calamity similar to that which had befallen it upon the stoppage of the Roman silver mines. The customary supplies of the precious metals were arrested, the general stock of specie had begun to diminish, and prices threatened to fall, not simultaneously, but in that irregular order which would subvert all the existing relations of society, and plunge them into an abyss as profound as that of the dark ages.

It is to the effort to avert this calamitous fall of prices that we are indebted to that extension, which amounts almost to a creation, of the modern banking system, and which took place between the years 1810 and 1830. As with many new systems, this one at first was employed without due precautions. Banks were established on too slender a basis, with too many and too important privileges, and the result was that, until better systems were devised, failures were common, and financial crises followed one another in rapid succession. Improved systems were, however, soon after established, and society at length learned how to conduct its exchanges, and sustain the accustomed level of prices even after the usual bases of such level—the European stock of the precious metals as maintained by the annual supplies from Spanish America—had fallen away. The perturbations in the commercial world during the interval when this experience was being acquired, viz., from the breaking out of the Spanish American War of Independence to the period when the produce of the Russian mines became important—say from 1810 to 1842—will long be remembered for their frequency and violence.

The Spanish American revolution, and therefore its precursor the French revolution, bequeathed to us something even more important than the modern banking system. It gave us the institution of free mining for the precious metals, which up to that period, and since the days of

is supported by Gerboux, Storch, Tooke, and several other writers of eminence. They all admit an important decline of the European stock of specie during the period of the Spanish-American revolution.

ancient Rome had been unknown.¹ When the tocsin sounded that proclaimed the revolution in New Spain the fetters fell from off the person of every mining slave in the world. Thenceforth the precious metals were to be obtained by FREE LABOUR ; and although the stock which conquest and slavery had amassed might last the world long enough to influence the value of whatever metal might be mined by freemen for centuries yet to come ; yet that influence was to continually grow less, and, at some time or another, would and will assuredly come to an end.

¹ Mr. Ward's "Mexico" contains an interesting and comprehensive summary of the mining laws and regulations of New Spain under the Spanish Crown ; but so far as it leaves the impression, which to some extent it certainly does, that the degree of freedom enjoyed by the mine owners (as to the workmen, they were always slaves up to the period of the revolution, and are virtually peons still) was due to any liberality on the part of the government, it is misleading. That the Spanish government accorded the privileges which he mentions, is due to the fact, and is one of the proofs that gold and silver mining is unprofitable. Had this been otherwise, there is no room to doubt, from its proneness to monopolize every profitable industry upon which it could lay its hands, that it would have conducted the mines itself.

As it was, it shrewdly left the miner to enjoy or suffer all the hazards of discovery, and encounter all the obstacles to production ; and when this was effected it taxed the product right and left, in every conceivable way, so as to leave as little of it to the producer as he was content to take.

CHAPTER XIX.

RUSSIA.

Silver mines of Nerzhinsk opened in 1704—Of Kolyvan in 1728—Gold mines of Voetsk—Gold discovered in the Ural in 1743—Gold washings of the Ural in 1814—Of Western Siberia, 1829—Eastern Siberia, 1838—Produce not important until after Spanish-American revolution—It helped to eke out the diminished supplies occasioned by that event—Reached its maximum in 1847 and remained steady for twenty years, when, owing to the introduction of the American hydraulic system, it began to further increase, and has now assumed still more important dimensions—Mining and minting subject to heavy charges—Silver mining in Russia unimportant and dwindling away.

THE silver mines of Nerzhinsk, which were opened in 1704, are situated in Dauria, the south-easternmost part of Siberia, between the rivers Shilka and Argoon, and are very numerous. Their produce from their first opening to the year 1772 was as follows:—

Period.	Russian pounds of silver.	Period.	Russian pounds of silver.
1704—1720	4,732	1751—1760	43,631
1721—1730	1,498	1761—1770	126,247
1731—1740	1,333	1771	16,733
1741—1750	15,657	1772	16,200 ¹

At the date last given these mines employed about 1,900 free colonists, between 1,000 and 1,800 convicts, and 11,000 Russian peasants of the district of Nerzhinsk—in all, about 12,300 persons. The annual average production divided among these persons did not amount to £4 per head!

¹ This contained about 200 pounds of gold, although the average proportion of gold to silver is only about $1\frac{1}{4}$ per cent.

The most important silver mines of Russia were those of Kolyvan, between the rivers Oby and Irtysh, near the mountains that separate Siberia from the country of the Calmuc Chinese. These mines were first discovered in 1728 by Akinfi Nikitich Demidof, who worked them secretly for his private emolument until 1744, when he made a merit of a necessity by turning them over to the Government. These mines produced from 1749 to 1762 from 8,000 to 16,000 pounds of silver; from 1763 to 1769 from 20,000 to 32,000; and after that period to 1778, from 40,000 to 48,000 pounds per annum. The silver contains upwards of three per cent. of gold. The whole produce ever extracted from the mines amounted in 1771 to 400,000 pounds of silver, with 12,720 pounds of gold; and from 1772 to 1778 inclusive, to about 44,000 pounds of silver, and 1,200 pounds of gold per annum. These mines employed "nearly 40,000 colonists, besides the peasants in the districts of Tomsk and Kusnetz, who, in lieu of paying the poll tax in money, cut wood, make charcoal, and transport the ore to the foundries."¹

The most ancient gold mine of Russia is that of Voetsk, near Olonetz, between Lake Onega and the White Sea. From 1744 to 1776 this mine yielded only 57 pounds of gold, and about 9,000 pounds of copper. As the expenses amounted to £16,000 more than the income, it was neglected until 1772, when it was again worked. After that time it only yielded two or three pounds of gold per annum.

The gold mines near Ekatherinburg in the Ural were discovered in 1743. The annual produce never exceeded 200 pounds, and it was commonly much less: in 1772 it was only 101 pounds.²

The celebrated mines of Berezovsk, east of the Ural mountains, were first worked in 1752. They consisted

¹ Bishop Coxe's "Travels," ed. 1792, iii. 435, from which work most of these details concerning the earlier mines of Russia were obtained.

² The pounds hitherto mentioned are Russian pounds, which are about one-tenth lighter than the avoirdupois.

originally of alluvial washings; but afterwards the gold was obtained from the adjacent rocks. Towards the close of the last century the Berezovsk vein mines yielded from 600 to 800 pounds troy of gold annually (£30,000 to £40,000). By the year 1850 the annual product had fallen to 100 pounds (£5,000). An effort is now being made to increase the production by the aid of improved machinery.¹ As tending to show the hazard and unprofitableness of gold mining, it may be stated that, in 1823, there were no less than sixty-six mining districts in the vicinity, of which all but eight had been abandoned as unprofitable.² According to Jacob, the whole amount of gold and silver obtained from the Russian mines from 1704 to 1810 was as follows:—

	Russian poods. ³	Pounds sterling, approximate.
Gold	1,726	3,757,156
Silver	61,859	8,412,824

The gold washings of the Ural proper were commenced by the Russian Government in 1814, those of Western Siberia in 1829, and of Eastern Siberia in 1838.

From 1811 to 1822 inclusive, the production of the precious metals in Russia, according to Jacob,⁴ amounted to the following sums:—

	Russian poods.	Pounds sterling, approximate.
Gold	2,910	6,334,488
Silver	12,104	1,646,144

This estimate must, however, be regarded as erroneous, for, according to the recent and authoritative accounts received from the Imperial Minister of Domains, and given

¹ Communication from the Russian Imperial Minister of Domains to the U.S. Monetary Commission, Report of the latter, i. App. 572.

² Phillips on "Mining and Metallurgy," p. 22.

³ The gold pood is reckoned at £2,176 16s., and the silver pood at £136.

⁴ Jacob's "History of the Precious Metals," vol. ii. p. 397.

hereinafter in full, the production of gold from 1814 to 1822 inclusive was but 197 poods. As this was the whole production for nine years, it appears improbable that for the three years immediately preceding, it should have amounted to so much as 2,713 poods, as stated by Jacob.

According to the official communication above referred to, the production of gold and silver in all the mines of Russia from 1814 to 1876 inclusive was as follows.¹ (There were no returns of silver to the Government prior to the year 1830.)

*Production of Gold in Russia, 1814 to 1829 inclusive.*²

Year.	Russian Poods. Pounds.		Pounds sterling.	Year.	Russian Poods. Pounds.		Pounds sterling.
1814	16	3	34,828	1822	53	31	117,547
1815	14	9	32,652	1823	105	26	230,741
1816	15	31	34,828	1824	205	32	448,421
1817	18	7	39,182	1825	237	12	515,902
1818	16	26	37,006	1826	230	10	500,664
1819	14	8	30,475	1827	261	33	570,322
1820	19	34	43,536	1828	291	33	635,626
1821	27	37	60,950	1829	288	27	629,095

¹ This communication was addressed by the Russian Minister of Domains to the U.S. Minister at St. Petersburg, and by the latter transmitted to the Monetary Commission under date of September 26, 1877, in whose report it is printed, p. 571. These returns are more complete than any hitherto published in this country, and though they differ slightly from those given by Phillips in his work on mining, pp. 21-24, and by Macgregor in his "Commercial Statistics," vol. iv. p. 267, they agree with those given by Humboldt in his "Fluctuations of Gold," p. 20, and must be regarded as authentic.

² The Russian pood consists of forty Russian pounds, and each pound of ninety-six zolotnicks. As, according to Kelly's "Cambist," the Russian pound equals 6318.5 grains troy, the Russian pood has been reckoned in these tables as equal to £2,176 16s. when in gold, and to £136 when silver. All fractions of less than one-half of a pood have been disregarded.

*Production of Gold and Silver in Russia, 1830 to 1876
inclusive.*

Year.	Gold.			Silver.		
	Poods.	Pounds.	Pounds sterling.	Poods.	Pounds.	Pounds sterling.
1830	382	26	833,714	1282	2	174,352
1831	402	5	875,074	1318	3	179,248
1832	422	30	920,786	1311	18	178,296
1833	409	30	932,488	1256	11	170,896
1834	405	2	881,604	1262	30	171,768
1835	392	37	855,482	1212	18	164,968
1836	406	4	883,781	1200	36	163,336
1837	442	22	964,322	1203	12	163,608
1838	443	5	964,322			
1839	495	32	1,079,693			
1840	457	39	996,974	average		
1841	646	16	1,406,212	1279	20	173,944
1842	909	3	1,978,711			
1843	1241	17	2,701,408			
1844	1279	37	2,786,304	1193	19	162,248
1845	1307	8	2,851,077	1911	35	260,032
1846	1611	26	3,509,002	1194	10	162,384
1847	1757	8	3,824,638	1143	38	155,584
1848	1684	28	3,667,908	1136	5	154,496
1849	1589	5	3,458,935	1118	7	152,048
1850	1453	32	3,165,067	1068	12	145,248
1851	1473	33	3,208,603	1052	16	143,072
1852	1366	30	2,975,686	1063	5	144,568
1853	1463	26	3,186,835	1023	28	139,264
1854	1596	27	3,476,350	1054	31	143,480
1855	1649	14	3,589,543	1062	39	144,568
1856	1655	19	3,604,781	1036	26	141,032
1857	1733	23	3,774,571	1058	6	143,888
1858	1710	24	3,724,505	1027	9	139,808
1859	1538	34	3,350,095	1084	4	147,424
1860	1491	18	3,247,786	1070	15	145,520
1861	1456	2	3,169,421	967	15	131,512
1862	1460	29	3,180,305	1033	23	140,624
1863	1459	18	3,175,951	1078	25	146,744

Year.	Gold.			Silver.		
	Poods.	Pounds.	Pounds sterling.	Poods.	Pounds.	Pounds sterling.
1864		1	2,950,000 ³		1	140,000 ³
1865		1584 ²	3,448,051 ³		1	140,000 ³
1866		1	3,380,000 ³		1	145,000 ³
1867		1	3,350,000 ³		1	145,000 ³
1868		1	3,600,000 ³		1	145,000 ³
1869		1	4,025,000 ³		1	100,000 ³
1870	2156	23	4,695,358	867	30	118,048
1871	2399	37	5,224,320	828	30	112,744
1872	2330	30	5,074,120	752	5	102,272
1873	2024	29	4,408,020	606	21	82,552
1874	2027	4	4,412,374	720	14	97,920
1875	1929	18	4,199,047	589	34	80,240
1876	1895	27	4,127,213		1	1

It will be seen from these tables that the production of the Russian mines was not important until after the revolution had broken out in Spanish America. The quantity of silver raised was never very great,¹ and it appears at the present time to be dwindling away; and even the gold produced did not amount to so much as £200,000 a year until the commercial world had for nearly ten years felt that scarcity of the precious metals which was occasioned by the course of political affairs in America. After provision had been made to palliate the threatened consequences of this scarcity by the establishment of banks of

¹ Returns omitted in the original.

² Phillips on "Mining," p. 127. He gives the production of gold in 1865 at 69,500 pounds troy, which is equal to 1,584 poods.

³ Sir Hector Hay, "Parliamentary Report on Silver," 1876, App. 25.

⁴ In a communication to Poffendorf's "Annalen," from Baron von Humboldt, dated about the year 1829, that illustrious writer, then recently returned from an examination of the Russian mines, estimated their annual produce at about £720,000 gold, and about £530,000 silver; but it would appear, according to his "Fluctuations," printed in 1838, that as to silver he was mistaken. Consult Jacob, vol. ii. 268 and 397.

issue throughout Europe, the Russian supply of gold increased to such dimensions as to afford something of a relief to the insufficient metallic reserves of the banks. In 1841 it amounted to £1,400,000 a year, whereas previously it had never exceeded £1,000,000, and in 1843 it rose to over £2,600,000. By this time, however, the population and commerce of the European world had so greatly increased over those of the year 1810, that even the supplies of gold from Russia were inadequate to render the total supplies from all quarters sufficient for the purposes of the world, and it was not until the discovery of the gold placers of California in 1848 that a thorough sense of relief was felt from the dangers that may justly have been apprehended from this source.

In 1847 the production of gold in Russia amounted to over £3,800,000, and this is the highest figure it attained until the year 1870, when it reached £4,700,000. In 1871 it amounted to over £5,200,000. Since this date it has declined to about £4,200,000, which is the amount of the annual production at the present time.

The American system of placer mining ("hydraulicking," as the miners call it in California) having been introduced into the Russian gold fields, hopes are entertained that the production will hereafter increase; but because the introduction of the hydraulic system usually only follows the impoverishment of the placers, these hopes may not be realized.¹

The production and mintage of the precious metals in Russia are subject to very onerous charges.

For each sagène (7 feet) in length of his claim the gold miner is bound to pay 15 copecks (about sixpence) as a locating fee. The produce must be reported to the Government, and sent to the Government smelting houses. Until 1877 this produce was subject to an ascending tax of 5, 10,

¹ Communication of Russian Minister of Domains, "Report U.S. Mon. Com.," App. p. 572. It should be added that the Russians have lately opened new gold fields at Munissinsk, Siberia, in or near the Chinese province of Thian-shan-pe-loo.

and 15 per cent. Since the first day of that year the tax has been abolished, and the producer has now only to pay the location fee, which it is proposed shall hereafter be predicated upon the area instead of the length of the claim, plus the cost of smelting, transportation to St. Petersburg, cleansing, and seignorage. As these last, however, still amount to about $2\frac{1}{2}$ per cent., and much annoyance is felt from the compulsory transmission of the produce to the capital, this requirement is proposed to be abolished. The taxes upon gold will then be limited to the location fee, refining, and seignorage. The return to the miner is not in gold coin, but in Treasury notes payable at the end of six months—another source of profit to the Government. Silver, when produced on Government land, is subject to a tax of 15 per cent., and when on private lands of 10 per cent., payable in silver. The Government is at present considering the propriety of materially lessening these charges and requirements.¹

¹ "Report U.S. Monetary Commission," Appendix, pp. 573-4.

CHAPTER XX.

CALIFORNIA AND THE PACIFIC COAST.

Accidental character of gold discoveries—Unavailing searches of the Spaniards in California—Suspicion of the Mission fathers—Prevision of geologists—The annexation of California to the United States due to the chances of an election, and the actual discovery of gold to the building of a mill and the observation of a child—Statistics of the production in California and the other States of the Pacific coast of America.

NOTHING more forcibly illustrates the almost purely accidental character of supplies of the precious metals than the discovery of the gold placers; indeed, the whole settlement and working of California as a great mining country. The Spaniards, solely intent upon obtaining the precious metals, had discovered and partly explored this country so early as the sixteenth century. They colonized and held possession of it for three centuries, established missions, pacified and converted the Indians, whom they used as domestic servants and workmen, and cultivated many of its arable valleys. They introduced into it all of the cereal grains known in Spain, and even transplanted the grape, the fig, the pomegranate and the artichoke. Persuaded from the outset that it was a country rich in the precious metals they never ceased to look for them. Occasionally they found some particles of gold, but not enough to warrant further search. The few adventurers who were attracted thither from time to time by stories of its mineral wealth, generally found their way back, disappointed and impoverished, to Mexico, whence, for the most part, they had come. A few remained to turn rancheros, and settle down with the mission fathers and the semi-

Christianized Indians into a sort of pastoral community, which eventually became a race of half-breeds, given to apathetic habits and the pursuit of pleasure.

Such were the economical and social conditions of California when the adventitious "success of the Democratic party (of the United States) in the close presidential election of 1844"¹ led to the independence of Texas, the war with Mexico, the annexation of California, and to its settlement by Americans. But for these events, which have no necessary connection with mining or the search for the precious metals, Alta California might have remained as Lower California has to this day, a province of Mexico, and might still have been the remote and undeveloped country that it was under the Spanish mission fathers.

The existence of gold in Lower California was known to Cortes, who fitted out an expedition from Mexico in 1537, and returned with some small quantities of the precious metal. Its existence in Alta California was discovered in 1577-79 by Drake's expedition, and noticed in Hakluyt's account of the region.² The finding of gold was mentioned in 1690 in a work published in Spain by Loyola Cavello, a priest at the mission of San José, in the bay of San Francisco. Captain Shelvocke in 1721 noticed signs of gold in the soil. The historico-geographical dictionary of Antonio de Alcedo, 1786-89, positively affirms the abundance of gold, and speaks of lumps weighing from five to eight pounds. In 1837 a priest from California went to Guatemala, and induced a Mr. Young Anderson, a Scotch gentleman, to endeavour to obtain English capital for the purpose of mining gold, which, he averred, was to be found not far from San Francisco. The favourable geological appearance of the country for gold was noticed by Prof. J. D. Dana, and recorded in his report on California. In April, 1847, a Mr. Sloat made a very decided statement of this kind in Hunt's

¹ "Report of the U.S. Monetary Commission," p. 43.

² The Report of the U.S. Mining Commissioner, Nov. 24, 1866, p. 268, contains other references to early discoveries of gold in California.

"New York Merchants' Magazine." At this time the Mormons connected with the army, together with some Mexicans and Indians, were engaged in searching for gold upon the banks of the streams. In January, 1848, some of these men gathered a quantity of gold on Mormon Island, near Sacramento, and within a few miles of the rich placers afterwards discovered.

And yet none of these observations or operations led to the great discovery, which was made by a child, the daughter of one Marshall, the overseer of Captain Sutter's mill. While a race was being dug for this mill on the American fork of the Sacramento, the child found a lump of gold which she showed to her father as a pretty stone. That lump was the beginning of over two hundred and twenty million pounds sterling, which the California placers have yielded to the world.

During the first few years after the discovery of the placers the entire precious metal product of the coast was derived from this source, and consequently consisted entirely of gold. Hydraulic mining was commenced in a small way so early as 1854, but it did not assume material proportions until after the close of the American Civil War. Vein mining was begun in California at about the year 1860. It has not even yet become important. It has, however, assumed enormous dimensions in the adjoining State of Nevada, where it was commenced at about the same time, and where the chief part of the product, in quantity though not in value, is silver. The principal, but by no means the only locality of this industry has been the Comstock lode, upon which Virginia city is built, many of the mines being directly beneath the town. The principal ones are some thirty in number, and at the present time are being worked at an average depth of 2,000 feet, though some few of them are down nearly half a mile.

From the following table it will be seen that the placers reached their maximum productiveness almost immediately after their discovery, the greatest yield having been in the

year 1853, when sluicing and hydraulic mining had already been commenced. Since the year 1853 the production has steadily fallen off, until at the present time it certainly does not equal £4,000,000, and may not exceed £3,000,000 a year.

Production of Gold in the State of California Proper.

SUMS IN MILLIONS OF POUNDS STERLING AND DECIMALS.

Year.	Production.	Year.	Production.	Year.	Production.
1848	£2·0	1859	£10·0	1870	£5·0
1849	8·0	1860	9·0	1871	4·0
1850	10·0	1861	8·16	1872	3·8
1851	11·0	1862	7·0	1873	3·6
1852	12·0	1863	6·4	1874	4·06
1853	13·0	1864	7·0	1875	3·52
1854	12·0	1865	7·0	1876	3·72
1855	11·0	1866	5·0	1877	3·0
1856	11·0	1867	5·0	1878	3·4
1857	11·0	1868	4·4		
1858	10·0	1869	4·5		

Turning from the statistics of the State of California proper to those of the Pacific coast generally—and this means substantially all of the United States, for the production of the precious metals on the Atlantic coast is too insignificant to merit consideration in this connection—we have the following results:—

Production of the Precious Metals in all the United States.

The production of gold from 1776 up to and including 1847 is estimated at £4,000,000. From 1848 to 1860 inclusive the production of California shown in the preceding table will answer as well for that of all the United States.

The production of silver from 1776 up to and including 1858 is estimated at £200,000. For 1859 it is estimated at £20,000, and for 1860 at £30,000.¹ The annual production of gold and silver, respectively, from 1861 to 1878 inclusive is shown in the following table:—

Annual Production in the United States of Gold and Silver, respectively, from 1861 to 1878 inclusive.

Year.	Gold.	Silver.	Year.	Gold.	Silver.
1861	² £8,600,000	² £400,000	1870	³ £6,750,000	£ ⁴ 3,200,000
1862	² 7,840,000	² 900,000	1871	³ 6,879,600	⁴ 3,622,270
1863	² 8,000,000	² 1,700,000	1872	³ 7,621,879	⁴ 3,711,315
1864	² 9,220,000	² 2,200,000	1873	³ 7,841,311	⁴ 5,026,292
1865	² 10,640,000	² 2,250,000	1874	³ 7,693,297	⁴ 5,080,476
1866	² 10,700,000	² 2,000,000	1875	³ 7,993,639	⁴ 6,041,997
1867	² 10,340,000	² 2,710,000	1876	³ 8,577,387	⁴ 7,636,870
1868	² 9,600,000	² 2,400,000	1877	³ 8,900,000	⁴ 7,600,000
1869	² 9,900,000	² 2,600,000	1878	³ 7,500,000	⁴ 7,000,000

All of the above estimates, except those based upon the returns from the mines, are excessive. Both Mr. Valentine's estimates and Mr. Raymond's, which are based upon them, contain many duplications, which were, perhaps, unavoidable from the method employed to obtain the returns. They also contain (except those marked "³") the precious metals produced on the west coast of Mexico and in British Columbia, which are shipped to San Francisco for a market. The estimates marked "⁴" are free from these objections. The details of the returns from the mines are given at length in

¹ R. W. Raymond, formerly Mining Commissioner, in Hewitt's "Century of Mining," pamphlet, Philadelphia, 1876, p. 31.

² R. W. Raymond in Hewitt's "Century of Mining."

³ John J. Valentine's Amended Estimates, published in "Report of U.S. Monetary Commission," vol. i. app. 22.

⁴ Returns from the mines to the present writer on behalf of U.S. Monetary Commission; "Report," vol. i. app. pp. 13, *et seq.*

the Appendix to the Report of the United States Monetary Commission, vol. i. pp. 1 to 60 inclusive.

The following table showing the estimated annual production of gold and silver together, by States, is derived from Mr. Valentine's original estimates, which, although excessive in its total sums by about one-fifth, or at least one-sixth,¹ is given here in order that a rough view may be had of the quantities produced in the various districts mentioned. The sums are in millions of pounds sterling and decimals.

States or Territories.	1869	1870	1871	1872	1873	1874	1875	1876	1877	1878
Arizona . .	·2	·16	·16	·12	·1	·1	·02	·22	·48	·46
California .	4·5	5·0	4·0	3·8	3·6	4·06	3·52	3·72	3·64	3·78
Colorado . .	·8	·74	·94	·94	·8	1·04	1·26	1·4	1·58	1·24
Idaho . . .	1·4	1·2	1·0	·54	·5	·38	·32	·34	·36	·38
Montana . .	1·8	1·82	1·6	1·22	1·04	·76	·72	·56	·52	·76
Nevada . . .	2·8	3·2	4·5	5·1	7·06	7·1	8·1	9·86	10·32	7·04
New Mexico.	·1	·1	·1	·1	·1	·1	·08	·08	·08	·1
Oregon and } Washington }	·6	·6	·5	·4	·32	·16	·24	·22	·24	·24
Wyoming . .	—	·02	·02	·02	—	—	—	—	—	—
Utah	—	·26	·46	·48	·76	·78	1·14	1·04	1·62	1·2
Other sources	·1	·1	·06	·06	·04	·02	·02	·02	·3	·44
Totals . . .	12·3	13·2	13·34	12·78	14·32	14·5	15·42	17·46	19·14	15·64
Valentine's } amended to- } tals ² . . . }	—	10·22	10·74	11·62	13·34	13·64	14·32	16·44	18·14	14·94
Correct totals ³	12·5	9·96	10·5	11·34	12·86	12·78	14·04	16·2	16·5	14·6

¹ See Mr. Valentine's evidence given before the writer, in "Rep. U.S. Mon. Com.," vol. i. App. pp. 32-48. Mr. Valentine's tables include nearly a million pounds sterling worth of lead, contained each year in silver (base) bullion. See, *Ibid.*, Question 107, and Mr. Valentine's report for 1878, where the value of this lead is placed at £700,000 to £1,000,000 a year, since 1873.

² "U.S. Monetary Com. Rep.," i. App. 22; and Valentine's Report, 1878.

³ As nearly as can be ascertained at present. Probably excessive as to gold portion.

The annual production of gold in British Columbia, nearly all of which finds its way to San Francisco, and is included in Mr. Valentine's original estimates, and therefore also in Mr. Raymond's, is given by the Colonial Minister of Mines in his report dated Victoria, Feb. 1, 1878, as follows. (Sums in pounds sterling):—

Year.	Production.	Year.	Production.	Year.	Production.
	£		£		£
1864	740,000	1869	360,000	1874	360,000
1865	700,000	1870	260,000	1875	500,000
1866	540,000	1871	360,000	1876	360,000
1867	500,000	1872	320,000	1877	320,000
1868	480,000	1873	260,000		

From these statements and figures it will be observed that the production of the precious metals in the United States reached its climax as to gold in 1853, and as to silver in 1876, and that it has since declined. At the present time the great mines of the Comstock lode, which of late years have yielded the principal supplies of both gold and silver, have recently almost ceased to be productive, and the outlook for the future, unless this is changed by new mining developments, points to a still further reduction in the crops of both metals.

CHAPTER XXI.

AUSTRALIA.

Gold discovered in 1851—Rush to the diggings—Ticket-of-leave men—Extraordinary production in 1852—Almost continual decline since—Statistics of annual production—Comparative yield of all the great gold-fields of the modern world—The discovery of gold in Australia due, not to scientific prevision, but to chance.

GOLD was discovered on the Macquarie River, New South Wales, in February, 1851, and by the 1st of June following there were upwards of 1,000 men in the diggings. On the 10th of June it was discovered on a tributary of the river Loddon, Victoria;¹ on the 20th of July at Mount Alexander, Victoria; on the 8th of August at Mount Buninyong, Victoria; and on the 8th of September at Ballarat, Victoria. In the month of October upwards of 7,000 miners were at work. By the end of the year the number of persons in all the placers of Australia was from 15,000 to 17,000, and some £900,000 worth of gold (mint value) had been taken out.² In 1852 the number of miners had swollen to something like 150,000 (including about 9,000 ticket-of-leave convicts³), when, notwithstanding the extraordinary and unequalled production of that year, it was found that on the average gold-digging was unprofitable, and many persons left the workings to engage in other pursuits.

Although gold-fields were subsequently discovered in several other of the Australian colonies,⁴ both the total

¹ New South Wales and Victoria were made separate colonies in 1851.

² "App. Cyc.," viii. 346, and "Progress of Victoria," by Wm. Henry Archer, Melbourne, 1867, p. 50.

³ "App. Cyc.," ii. 383.

⁴ New Zealand, 1852; South Australia and Tasmania about 1852; Queensland, 1857.

production and the number of miners employed declined after the year 1852 with little interruption,¹ until, at the present time, the former scarcely exceeds £4,000,000 a year, and the latter 50,000 men.

The following table shows the estimated annual production of gold in all the Australian Colonies from the discovery of the first placers in 1851 to the present time, and is chiefly from the tables, presented to the British Parliamentary Commission on Silver in 1876, by Sir Hector Hay. The estimates for the years 1851, 1876, 1877, and 1878 are by the present writer.

Annual Production of Gold in all Australia, 1851 to 1878 inclusive, chiefly after Sir Hector Hay. Sums in pounds sterling.

Year.	Production.	Year.	Production.	Year.	Production.
	£		£		£
1851 ²	900,000	1854	9,540,000	1857	11,400,000
1852 ³	20,600,000	1855 ⁴	12,000,000	1858	10,680,000
1853	14,140,000	1856	14,280,000	1859	10,820,000

¹ "Report of Mr. Consul James F. Maguire," "U.S. Commercial Relations," 1860, p. 53.

² This estimate for 1851 is based on the statement in the "Progress of Victoria," p. 50, that 145,137 oz. of gold were exported in that year from Melbourne alone. "App. Cyc.," viii. 351, gives a nearly equal amount for the production in that year of New South Wales.

³ This figure seems excessive; but it has been retained only after a careful comparison of several authorities. The Melbourne gold-brokers, who had every opportunity of being well informed on the subject, state that, in the earlier years, large amounts of gold were carried away in private hands, without being reported in the exports at the Custom House. See "Progress of Victoria," p. 50; also Appleton, viii. 346, where it is stated that "the product of both colonies decreased annually from 1852."

⁴ Vein mining, now successfully established in Victoria, produced in this year one-eighth of the entire yield of the colony. "App. Cyc.," viii. 347.

Year.	Production.	Year.	Production.	Year.	Production.
	£		£		£
1860	10,500,000	1867	7,920,000	1874	6,000,000
1861	9,760,000	1868	7,640,000	1875	5,760,000
1862	9,360,000	1869	6,320,000	1876	5,200,000
1863	8,880,000	1870	5,840,000	1877	4,800,000
1864	9,140,000	1871 ¹	6,660,000	1878	4,000,000
1865	8,820,000	1872	6,800,000		
1866	8,840,000	1873	6,300,000		

The total production from the discovery to the present time has amounted to upwards of £240,000,000, a greater sum than that obtained from either of the previous notable gold-fields, of which the following table affords a rough comparison :—

Comparative Yield of the Great Gold Fields of the Modern World.

Country.	Period during which the product was not generally less than £1,000,000 a year.	Total product of gold from beginning to end.
Japan	1580 to 1639—60 years	£40,000,000
Brazil	1710 to 1789—80 years	180,000,000
Russia ²	1840 to 1878—39 years	160,000,000
California Proper ² . .	1848 to 1878—31 years	220,000,000
Australia ²	1851 to 1878—28 years	240,000,000
Totals	238 years	£840,000,000

It has been frequently claimed that it was owing to the observations of Sir Roderick Murchison, in 1844, concerning

¹ Vein mining began in New South Wales in 1871. "Progress and Resources of New South Wales," Sydney, 1871, p. 21.

² These gold-fields are still yielding "over £1,000,000," to wit, about £4,000,000 a year each.

the similarity between the geological formation of the Australian and the Ural mountains, that gold was discovered in Australia.¹ But this was no more the fact than that it was owing to either of the following observations:—

A despatch of the Lieutenant-Governor of the Colony to the Secretary of State dated September 2, 1840, enclosed a report from Count Strzelecki stating that he had discovered auriferous pyrites in the vale of Clwydd in 1839;² and the Rev. Mr. Clark, a geologist, announced his discovery of the metal in the same colony in 1841. The Indians knew of it; and made their arrow-heads of gold. The white shepherds found some; but wisely refrained from searching for more.³ The fact is, that the discoveries of 1851 were not owing to any of these observations, but to the chance prospecting of a California miner named Hargreaves.

Australia was not a solitude when Hargreaves visited it. The aborigines had roamed its mountains and encamped upon its auriferous river banks from time immemorial, without troubling themselves about its gold. It had been a penal colony of Great Britain since 1788, and at the period of the discovery of gold contained a permanent population of nearly 400,000 white persons, a large portion of whom were free colonists engaged in agriculture and sheep farming, whose settlements stretched in every direction; who, before the gold discoveries, had been engaged among other industries, in mining copper; and who, therefore, had a motive for prospecting the country for metals. Yet more than sixty years had passed after the colony was established before its auriferous deposits came to light.⁴

¹ Report of the Commissioners of the International Congress of Australian statistics in 1861, published in Phillips on "Mining," p. 102.

² The Count afterwards stated that he was urged by the Governor to keep the discovery secret, for fear it would impair the discipline of the 45,000 convicts on the island. "Thirty Years in New South Wales and Victoria," quoted by Phillips.

³ Some of the shepherds had picked up pieces of gold in Victoria, but they wisely paid no further attention to the matter. Phillips, 103.

⁴ Porter's "Progress," ed. 1851, p. 770.

CHAPTER XXII.

STATISTICS OF THE WESTERN WORLD'S PRODUCTION.

Production of gold and silver chiefly by decades from the discovery of America to the beginning of the nineteenth century, and annually since—Production in late years by countries—This production absolutely declining—At the same time the population and commerce of the Western world are increasing—These circumstances should not occasion alarm—The precious metals ceased, after the seventeenth century, to be all of the Measure of Value—This is now formed in great part of paper numéraires—These, together with coins and notes, constitute the actual Measure of Value.

THE following statistics of the production of gold and silver in the Western world relate to America, Europe, and those portions of Africa open to European commerce. With the exception of the £100,000,000 obtained from Japan by the Portuguese and Dutch, they comprise nearly all the precious metals acquired by the European world since the discovery of America to the beginning of the present century.¹

- I. *Showing, chiefly by decades, the estimated average annual Production of Gold and Silver by the mines of America from the Discovery to the beginning of the nineteenth century. From the works of Baron von Humboldt, the Abbé Raynal, Mr. Ward, and the Compiler of Executive Document No. 117, 1st Session, 21st Congress, U. S. A.*

SUMS IN POUNDS STERLING.
Average Annual Production.

Period.	Gold.	Silver.
1493 to 1545 (53 yrs.)	£340,000	£120,000
² 1546 to 1555	600,000	² 3,400,000
1556 to 1570 (15 yrs.)	540,000	1,460,000

¹ These data were originally compiled by the author for the U.S. Monetary Commission, and published in its report, vol. i. App. pp. 61, *et seq.*

² Discovery of Potosi.

Period.*	Gold.	Silver.
1571 to 1580	£400,000	£1,400,000
¹ 1581 to 1590	600,000	¹ 2,800,000
1591 to 1600	600,000	2,800,000
1601 to 1610	500,000	2,300,000
1611 to 1620	500,000	2,300,000
1621 to 1630	560,000	2,440,000
1631 to 1640	600,000	2,600,000
1641 to 1650	600,000	2,600,000
1651 to 1660	560,000	2,440,000
1661 to 1670	560,000	2,440,000
1671 to 1680	560,000	2,440,000
1681 to 1690	560,000	2,440,000
1691 to 1700	1,500,000	2,300,000
² 1701 to 1710	² 2,400,000	2,000,000
1711 to 1720	2,400,000	2,200,000
1721 to 1730	3,000,000	2,400,000
1731 to 1740	6,000,000	2,600,000
1741 to 1750	4,000,000	3,200,000
³ 1751 to 1760	2,200,000	³ 3,800,000
1761 to 1770	2,000,000	3,800,000
⁴ 1771 to 1780	2,000,000	⁴ 5,000,000
1781 to 1790	2,000,000	5,600,000
1791 to 1800	⁵ 2,000,000	⁶ 6,400,000
Totals, 308 years	£393,120,000	£745,260,000

According to Mr. William Jacob, the gold and silver produced in America, Europe, and Africa, and supplied to the commercial world from 1492 to 1809 was £1,360,600,000. Of this amount he credits Europe and Africa with £137,000,000, leaving £1,223,600,000 for the production of America alone.

¹ Amalgamation process first employed in America by Medina in 1567. Consult Tooke, vi. 358. This process, however, was well known to the ancients.

² Brazilian gold-washings begin to be productive.

³ Exploration of Biscaina and Sombrerete, Mexico.

⁴ Exploration of Valenciana, Mexico.

⁵ Ex. Doc. 117, *note*.

⁶ Brogniart, "De Minéralogie."

Deducting £83,200,000 for the production of the nine years 1801-1809 inclusive, would leave £1,140,400,000 for the production of America during the period 1492-1800 inclusive. The £1,360,600,000 he disposes of as follows:—

Exported to Asia	£399,000,000
Converted into articles of use and ornament	440,000,000
Lost by abrasion, casualties, &c.	175,000,000
Left for coin in Europe and America	346,600,000

This last-named sum, added to the estimated stock of coin on hand in Europe in 1492, viz., £33,400,000, amounts to £380,000,000, which is his estimate of the stock of coin in the Western world in the year 1809.

Mr. Danson's estimate of the production of the precious metals in America during the period 1492-1803 is £1,122,000,000. Deducting £25,600,000 for the production of the three years 1801-1803, would leave £1,096,400,000 for the production of America during the period 1492-1800 inclusive.

The quotient of Table I. given above is £1,138,380,000. It is, therefore, £2,020,000 less than Mr. Jacob's estimate, and £41,980,000 in excess of Mr. Danson's. While Mr. Danson's estimate for this period is probably nearest the truth, the figures given above are preferred, because they show the production by details of gold and silver separately, and by decades of years, which is not the case with either Jacob's or Danson's tables.

II. *Showing the estimated Production of SILVER in the Western World (America, Europe, and Africa) annually, since the commencement of the nineteenth century.*

The figures for the years 1800 to 1829 inclusive are constructed on the following basis:—The amounts coined at all the legal mints of Mexico, brought to the royal mint of Potosi, and raised in and exported from Coquimbo, are put together, and to the quotient £2,000,000 are added each year for the conjectured production of all other countries in Europe and America. This conjecture is warranted by Sir Hector Hay and employed in his tables of production.

The figures for the years 1830 to 1851 inclusive are from various

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compilations indicated in the foot-notes. When not otherwise indicated, they are from Danson's compilation, "London Statistical Journal," xiv. 23.

The figures for the years 1852 to 1874 inclusive are from Sir Hector Hay.

The figures for 1875 and 1876 are compiled by the present writer, and for 1877 estimated.

Sums in millions of pounds sterling.

Year.	Production.	Year.	Production.	Year.	Production.
1800	¹ 6·56	1810	6·28	1820	4·52
1801	¹ 6·18	1811	5·28	1821	3·90
1802	¹ 6·28	1812	4·26	1822	4·54
1803	7·16	1813	4·54	1823	4·20
1804	7·90	1814	4·54	1824	4·26
1805	7·84	1815	3·72	1825	4·10
1806	7·36	1816	4·26	1826	4·04
1807	6·88	1817	4·16	1827	4·32
1808	6·68	1818	4·82	1828	4·30
1809	7·50	1819	4·88	1829	4·56
Total, 30 years					159·82

Year.	Production.	Year.	Production.	Year.	Production.
1830	4·40	1838	4·00	1845	6·00
1831	4·40	1839	4·40	1846	² 6·30
1832	4·20	1840	4·80	1847	6·80
1833	4·20	1841	5·00	1848	7·80
1834	4·20	1842	5·10	1849	7·60
1835	4·00	1843	5·60	1850	³ 8·78
1836	4·00	1844	6·40	1851	⁴ 8·10
1837	4·00	Total, 22 years			120·08

¹ Brogniart, "De Minéralogie."

² Birkmyre.

³ Phillips.

⁴ "Journal des Economistes."

Year.	Production.	Year.	Production.	Year.	Production.
1852	8·12	1861	8·54	1870	10·32
1853	8·12	1862	9·04	1871	12·20
1854	8·12	1863	9·44	1872	13·04
1855	8·12	1864	10·14	1873	14·04
1856	8·14	1865	10·40	1874	14·30
1857	8·14	1866	10·14	1875	14·00
1858	8·14	1867	10·84	1876	15·20
1859	8·16	1868	10·04	1877	14·00
1860	8·16	1869	9·46		
Total, 26 years					268·36

According to the preceding table the production of silver throughout the Western world during the period 1800-1829 was £159,820,000, and during the period 1830-1851, inclusive, £120,080,000. Deducting £24,480,000 for the three years 1849-1851 would leave £255,420,000 for the period 1800-1848 inclusive. For the period 1803-1848 inclusive Mr. Danson estimates the American production of silver at £249,000,000, and Tooke the European and African production at £30,000,000. If to these sums there be added £20,000,000 for the production of the three years 1801-1803, the total sum of production, 1800-1848 inclusive, according to Danson and Tooke, would be £299,000,000; but for reasons similar to those adverted to in a subsequent part of this chapter, relating to the gold production since 1800, Mr. Danson's estimates of the American production of silver are regarded as excessive, and the figures of the foregoing table are preferred.

III. *Showing the estimated production of GOLD in the Western World (America, Europe, and Africa), annually, since the commencement of the nineteenth century.*

[The figures for the years 1800 to 1847, inclusive, are derived from estimates by the following authorities:—Humboldt, Raynal, Duport, Breguiart, Ward, Jacob, Danson's compilation, and Tooke's "History of Prices," vol. vi. For this period the statistics are very unsatisfactory, and are more reliable by groups of ten years than for any single year taken

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by itself. The figures for the years 1848 to 1876, inclusive, are from the authorities quoted in the foot-notes.]

Sums in millions of pounds sterling.

Year.	Production.	Year.	Production.	Year.	Production.
1800	¹ 2·00	1816	1·20	1832	2·40
1801	² 2·60	1817	1·20	1833	2·40
1802	1·80	1818	1·40	1834	2·40
1803	1·60	1819	1·80	1835	3·00
1804	2·20	1820	1·60	1836	3·00
1805	2·00	1821	2·00	1837	3·00
1806	2·00	1822	1·80	1838	3·00
1807	2·00	1823	1·80	1839	3·00
1808	2·00	1824	2·00	1840	³ 4·00
1809	2·00	1825	2·20	1841	4·00
1810	2·00	1826	2·20	1842	4·00
1811	2·00	1827	2·00	1843	4·00
1812	1·20	1828	2·00	1844	4·00
1813	1·40	1829	2·60	1845	4·00
1814	1·40	1830	2·60	1846	5·84
1815	1·20	1831	2·40	1847	8·00
Total, 48 years					120·24

Year.	Production.	Year.	Production.	Year.	Production.
1848	⁴ 13·50	1858	⁷ 28·92	1868	⁷ 21·94
1849	17·40	1859	⁷ 28·98	1869	⁷ 21·24
1850	⁵ 18·64	1860	⁷ 23·86	1870	⁷ 21·38
1851	⁴ 24·00	1861	⁷ 22·76	1871	⁷ 21·40
1852	⁴ 38·74	1862	⁷ 21·56	1872	⁷ 19·92
1853	⁶ 31·00	1863	⁷ 21·40	1873	⁷ 19·44
1854	⁶ 25·40	1864	⁷ 22·60	1874	⁷ 18·16
1855	⁶ 27·00	1865	⁸ 26·14	1875	⁷ 19·50
1856	⁶ 29·52	1866	⁷ 24·44	1876	18·00
1857	⁶ 26·66	1867	⁷ 22·80	Total, 29 years	
				676·30	

¹ Brogniart. ² Birkmyre. ³ Russian gold-washings productive.

⁴ "Westminster Review," January, 1876. ⁵ MacCulloch.

⁶ "Journal des Economistes." ⁷ Sir Hector Hay. ⁸ Blake.

It should be stated in reference to the period of forty-eight years, 1800 to 1847 inclusive, which foots up £120,240,000, that this sum is considerably less than that assigned by Danson to America alone. His figure for the period of forty-five years, 1804-1848, is £142,179,411. If the production for the years 1800-1803, namely, £8,000,000, be deducted from, and the figures for the year 1848, namely, £13,500,000, be added to, the total shown in the above table, so as to make it agree with the period shown in Danson's, the total will only amount to £125,740,000, or to £16,439,411 less than Danson's estimates.

An analysis of the latter, however, will hardly stand the test of criticism, and the figures are evidently excessive. For example, on the strength of five years' custom-house returns of exports of gold from Buenos Ayres during the period 1822-1826, Mr. Danson assumes the same average, namely, £71,836 per annum, for the entire period, 1809 to 1848 inclusive, and adds — quite gratuitously — 266 $\frac{2}{3}$ per cent. to this for smuggling to make a total from Buenos Ayres of £10,535,976. On the strength of an incidental remark by the British consul, in 1831, to the effect that the exports of specie from Montevideo in 1803 and 1804 may be taken as the ordinary shipments, he makes out a total export from that port during the period 1809-1848 of £40,000,000, of which he arbitrarily assumes 47 per cent., or £18,800,000, to have been in gold. These two results, together with £4,802,282 determined, upon a little better basis, to have been otherwise produced, in Buenos Ayres, give a grand total of £34,138,258 as the production of gold in that country during the period 1809-1848, whereas *one-tenth* of the amount would probably be much nearer the truth.

In a similar manner, on the sole basis of returns of £8,825,119 of gold coined at the mints of Bogota and Popayan, in Columbia, during the period 1804-1829, which gold is believed to have consisted entirely of old coin and plate, he makes out a production of gold for that country during the period 1804-1848 of £40,851,066. Not to

pursue these palpable exaggerations any further, it need only be stated that while the statistics for this period are very unsatisfactory, the figures of Humboldt, Ward, and Jacob are a sufficient warrant for keeping the average production of the period under £2,000,000 a year until the opening of the Russian gold-washings, and then at very little over £2,000,000 a year until these washings began to make a comparatively important addition to the then very limited supplies of gold to the world; and this did not occur until after the year 1840, when for the first time the Russian product amounted to so much as £1,000,000 a year.

Jacob's estimate of the average production of gold during the period 1809-1829 is £1,598,000 per annum, and this includes £720,000 per annum for Europe and Asia, leaving but £878,000 per annum for all America.

A compilation published in U. S. Ex. Doc. 117, 1st Session, 21st Congress, 1830, estimates the annual production of gold in the world from 1801 to 1810 at £2,000,000 a year, and from 1811 to 1825 at £1,540,000 a year.

From these evidences and the details contained in Humboldt, Jacob, Ward, Tooke, &c., it is believed that the figures of the above table are approximately correct, at least for any group of ten years, and, if at all wrong, that they are excessive. It will be observed that the lowest point of production is assigned to about the year 1816. MacCulloch differs from this in ascribing the lowest point to about the year 1829; but there is reason to believe that in this respect, and because he judged rather from the receipts of new metal in Europe than from the production at the mines, that eminent author placed the date of the minimum production a few years behind the true time.

The general results of the foregoing tables are as follows :—

Sums in millions of pounds sterling.

	Silver.	Gold.
Production of America during the period 1493—1800	745·26	393·12
Production of America, Europe, and Africa supplied to the Western World during the period 1801—1876	527·70	794·54
Totals	1272·96	1187·66

or twelve hundred and seventy-two million nine hundred and sixty thousand pounds in silver, and eleven hundred and eighty-seven million six hundred and sixty thousand pounds in gold.

The following table shows the estimated production of gold and silver, respectively, throughout the world, by countries during the years 1877 and 1878.

Sums in millions of pounds sterling.

Countries.	1877.		1878.	
	Gold.	Silver.	Gold.	Silver.
United States	8·8	7·6	7·5	7·0
British America (Columbia and Nova Scotia)	0·6	—	0·6	—
Mexico and South America .	0·8	5·0	0·6	4·0
Australia	4·8	—	4·0	—
Russia	3·8	0·1	3·6	0·1
Other countries	0·5	2·0	0·4	2·0
Total	19·3	14·7	16·7	13·1

With reference to the probable future supplies of the precious metals and their relation to the population and commerce of the world, the former must be expected to decline both relatively and absolutely. The population and

commerce of the Western World are both increasing. At the same time the mines of all the principal producing countries, the United States, Mexico, South America, Australia, and Russia, are all declining in productiveness; and unless new and unforeseen discoveries—and it is difficult to conjecture in what quarter of the world such discoveries can be made—should put a different face upon the matter, the production of both gold and silver will continue to diminish. This conclusion should, however, furnish no ground for alarm. Since the beginning of the eighteenth century the precious metals have become less and less the general Measure of Value that they once were throughout the Occidental world, and more and more the measure of the Measure of Value; which latter is now the whole sum of intrinsic coin, plus the sum of token or subsidiary coin, plus the sum of bank and government and other paper employed as money. The precious metals are merely the foundation of this edifice, and for a very considerable portion of the superstructure, to wit, the irredeemable or unredeemed paper currencies of many countries, the precious metals afford no basis whatever. Whether the partially numerary systems in vogue in these countries (Brazil is the only one among them whose monetary system appears to be entirely numerary) will last, and so permanently reduce the requirement for the precious metals or not, is a problem for which it is no part of the design of this work to offer a solution.

CHAPTER XXIII.

STATISTICS OF THE WORLD'S CONSUMPTION.

The consumption of the precious metals for other purposes than coin is difficult to determine—Out of £2,660,000,000 sterling supplied to Europe since the discovery of America, about £720,000,000 have been retained for coin, £600,000,000 shipped to Asia, and £1,340,000,000 consumed in the arts or lost.—Of the total supplies from time to time nearly three-fourths consumed in the arts and shipped to Asia—Metal is rarely recovered from the arts—The primary demand is not for coin, but for manufactures.

THERE unfortunately exist no means of determining with any reasonable precision the amount of the consumption of the precious metals for other purposes or in other ways than for the purpose of money. Efforts of this sort have been made by Mr. Jacob and other writers, but they are not only too rude to be depended upon: those which, like Mr. Jacob's, have been made with any care, are antiquated, and would not afford any guide to the present disposition of these metals. The only satisfactory view which can be had of the subject is the limited one obtained by deducting from the total supplies since the discovery of America, the stock on hand as money at the present time. The remaining sum will necessarily be that of the meanwhile total consumption of the precious metals in the arts, shipments to Asia, loss by accident, and wear and tear by the abrasion of coin.

The total sum of the supplies to Europe up to 1878 inclusive were about £2,627,800,000.¹ To this must be added £33,400,000 for the amount of specie estimated to have

¹ This includes the £103,400,000 from Japan mentioned in chapter xvii., *ante*.

been in use as coin in Europe at the period of the discovery of America. The total of these two sums is £2,661,200,000. The amount of coin estimated to have been in the Western World in 1876 was £700,000,000, and at the present time it is from £600,000,000 to £700,000,000. It follows that of the total supplies nearly £2,000,000,000, or over seventy per cent., has been lost, consumed in the arts, or exported to Asia.¹

Similar calculations, made up to previous dates, determine the proportion of consumption to production to have been as shown in the following table:—

Sums in millions of pounds sterling.

Date.	Cumulative supplies to date.	Stock at date.	Cumulative consumption to date.	Per cent. of consumption to supplies since last date.
1675	² 509	250	259	50
1700	592	297	295	50
1776	1,054	275	779	74
1808	1,314	380	935	71
1828	1,441	313	1,128	78
1838	1,510	270	1,240	82
1850	1,675	400	1,275	76
1860	2,040	560	1,480	72
1870	2,365	720	1,645	70
1876	2,564	740	1,824	71

From this calculation it appears that, within the past century, the consumption in the arts, &c., and for expor-

¹ The flow of specie to Asia since the discovery of America is difficult to determine, the principal obstacle lying in the uncertainty which attended this movement during the eighteenth century. According to Jacob, supplemented by other estimates which include the flow before and since the period treated by him, the total flow to date has been upwards of £700,000,000. Allowance for the £103,000,000 obtained from Japan, would reduce the net flow to Asia to £600,000,000. It has therefore absorbed about one-third of the whole amount not reserved for coin in the European world.

² Including the £103,000,000 from Japan.

tation to Asia has never fallen below 70 nor risen above 82 per cent. of the total supplies, and this only at one period of unusual metallic dearth. These results appear to afford ground for the opinion that, hereafter as heretofore, this consumption will amount to about three-fourths of the supplies; but such an opinion, though possibly correct, should not be adopted without further examination.

The first influence that would seem to govern the distribution of the precious metals is the requirement for coin, for upon the quantity coined appears to hang the most important consequences, to wit, the general level of prices, and therefore the relations of exchange, which means most of those of society. But this is by no means the case. Coin has been superseded to so great an extent in the transaction of exchanges, that although it continues to form the basis of them in several of the leading countries of the world,¹ its actual use has been dispensed with to a very considerable degree. Hence whether more or less of it is used as money, or it is allowed to be superseded by acceptable forms of paper, are facts that do not appear to be essential to the maintenance of prices, or the existing relations of exchange and society. Thus, some £40,000,000 of metal are said to have been accumulated in the United States within the past few years with the view to resumption this year (1879). If this be true it would seem that £40,000,000 which would otherwise have been consumed in the arts, &c., have been reserved for coin; but the fact, if it is one, does not seem to have influenced prices one way or another. These continue generally to be the same as before. The employment of bank cheques, bank and government notes, and other forms of paper is so extensive, that the monetary circulation of the commercial world has become

¹ It will be borne in mind that, except Great Britain and Germany, no leading country of the world was, until quite recently, paying specie. The United States suspended in 1862; Austria in 1865; Italy in 1866; and France in 1870. Spain, Turkey, Russia, and Japan have also, in fact, suspended.

highly elastic; and it is only when the specie basis is dangerously low, as in the years previous to 1838, or needlessly and superfluously high, as in those previous to 1870 (*vide* the above table) that the value or purchasing power of the precious metals is affected enough to change the usual course of their distribution. For it must be considered that the enormous stock on hand, say £600,000,000 to £700,000,000 at the present time, acts as a powerful conservator of prices. Substantially not an ounce of this metal can change its purchasing power until that of the whole mass is changed, and the mass is so magnified by the use of paper substitutes that such change is slow and gradual. The miner can no more afford to wait until specie goes up, before he sells, than the silver and goldsmith can afford to wait until it goes down before he buys; consequently the one sells and the other buys, from time to time, without the least reference to the world's stock of coin, and without being at all affected (except at periods of extremity) by its fluctuations.

It would therefore seem to follow, that the distribution of the supplies of the precious metals is not primarily governed by the requirement for coin, but, owing to the elasticity of the demand for coin, rather by the requirement for the arts.

Another consideration is involved in the fact that, turned into coin, metal affords no profit, while as used in the arts it does. Hence the prime tendency of the consumption of the precious metals should be, and indeed is, towards the latter. In selling his metal to the mint the miner has to compete with the spoliations and servile labour of past ages, for he can obtain no more for his product than the current value of an equal amount of gold or silver, the bulk of which was stolen from conquered races, or forced from the labour of slaves. But in devoting it to the arts, or what is the same thing, shipping it to Asia, he, or rather the silversmith, gold-beater, or merchant, who now acts for him, can dispose of it to better advantage, and this fact is enough to turn the scale in favour of its general flow towards the arts. Still another matter for thought lies in the fact that while

there may be no loss in melting coin, there is a very serious one in melting plate, or reducing other works of art to crude gold and silver. Hence, while it is quite a common thing to do the former, it is a very rare one to do the latter.¹ In many forms of art, as in gilding, dentistry, photography, &c., the precious metals cannot be reduced to crude forms, and are, indeed, practically irrecoverable. This is much the case, also, with reference to the shipments of specie to Asia. This specie goes into circulation there at a much lower level of prices than that in Europe, or else it is melted down and used in the arts, for bangles and other jewellery, for gilding crockery, lacquer-ware, &c., or in the manufacture of those beautiful bronzes for which the Orient is famous, and nearly all of which contain some alloy of silver. The general result is that what metal goes into the arts in Europe, or is shipped to Asia, remains there,² and as it goes there in the first place without reference to the scarcity or plentifulness of coin in the European world, it remains there with equal indifference to that important consideration.

Upon a general review of the subject it would appear that now, at least, not coin, but the arts, are the first and principal attraction that determines the distribution of the precious metals, and that it is only after the demand for the arts has been satisfied that the supplies of specie are permitted to accumulate as coin.

¹ "Not one-hundreth part of what passes through their (the bullion dealers') scales, consists of gold and silver that had before been manufactured." Jacob, vol. ii. p. 316.

² The only notable exceptions to this rule were the melting of plate during the Spanish and Spanish-American revolutions, and the return of silver from India to England during the years 1832 and 1833.

CHAPTER XXIV.

FLOW OF SPECIE FROM EUROPE TO THE ORIENT.

Flow of specie between the continents governed by prices—Direction of this flow at different epochs—In the prosperous days of Greece and Rome it was eastward—In the dark ages westward—Since the discovery of America it has been eastward—Exchange of silver for gold governed by same influence, but independent of the general movement—The Venetian trade with the Orient was at first mainly for the precious metals, afterwards mainly for spices—Rivalry in the spice trade led to the discovery of America—First definite information of the movement of specie to the Orient—Statistics of the flow—Statistics of the ebb—The resulting movement—Proportions of gold and silver.

IN the prosperous eras of ancient Phœnicia, Greece, and Rome, and in Europe since the discovery of America, there has existed a tendency for the precious metals to flow toward the Orient. This circumstance has given rise to the impression that specie has always tended to flow in the same direction; but such is not the fact. On the contrary, during the dark ages of Europe, the direction of this movement was from the Orient westward; and the reason for this was precisely the same one that, at the other periods, caused it to take an easterly course. This was the different levels of prices that prevailed at the same time in Europe and Asia. Probably during the Phœnician and Greek eras of prosperity, and certainly during those of Rome and modern Europe, the level of prices in Europe was higher than that in the Orient, which, indeed, is only another way of saying that during these eras the Western countries possessed more gold and silver than the Eastern. As the precious metals will naturally flow to those countries whence the greatest

returns in merchandise can be obtained for them, they flowed under these circumstances to the Orient. Contrariwise, when, during the dark ages of Europe, which coincided with an era of great prosperity in India and China, prices fell to a lower level in Europe than in Asia, gold and silver flowed back from the Orient by the hands of the Arabian and afterwards of the Italian traders, and found their way to Europe.

This tendency has, at times, been overcome by conquest, at others by cunning, as when Darius and Alexander in ancient times, and the Persians and British in modern ones, conquered India, or the Portuguese and Dutch plundered and cheated the inhabitants of the eastern coasts and islands. But so soon as the influence of these events lost force, the flow of the precious metals was always resumed from the direction of high prices to low ones.

Beside the tendency of the precious metals collectively to flow towards low prices, there has existed, also through the operation of prices, a tendency for one of these metals to replace the other. Thus silver has at all times within historical periods tended to flow from Europe to Asia, for the reason that in the Orient it was worth more when exchanged for gold than in the Occident. This was due to the greater plentifulness of silver in the West; and this again to the successive development of the silver mines of Laurion by the Greeks; those of Spain by the Romans; of Germany by the mediæval Europeans; of Mexico and Peru by the Spaniards; and of Nevada by the Americans.

So far as these general views concerning the flow of the precious metals between the continents relate to ancient times, they embody nearly all the information which is now accessible to us upon the subject. Active trade between Europe and India was carried on by the Phœnicians, the Carthaginians, the Greeks, the Egyptians under the Ptolemies, and the Romans; yet of all this traffic, conducted by so many prominent nations, and through a period covering at

least forty centuries of time, history has preserved to us but a single quantitative record. This occurs in the "Natural History" of Pliny, who observes that the trade of Italy with India and China, took annually from the Roman empire *millies centena millia sestercium*.¹

Whether this sum is expressed in silver or relates to a money of account, or a simple numerary, is uncertain. It is generally considered to mean silver; and if Pliny wrote of his own time, this opinion is probably correct, for in Pliny's time the Roman numerary system was extinct. This sum has been variously translated as equal to from £70,000² to £800,000.³ From a passage in Cicero we learn that during the declining days of the Commonwealth the exportation of the precious metals had been frequently prohibited.⁴ This prohibition was still more frequently renewed under the emperors; but, it would appear, with little effect. However, as the empire declined, as the precious metals grew scarcer in Europe than Asia, and as prices fell in the former below the level of those in the latter continent, the flow of specie to the East ceased naturally, and the legal interdict became obsolete.

Not only did the movement of specie come to an end. As the decay of the empire proceeded, and as turbulence and disorder assumed the place of industry and commerce, the entire trade fell off. This occurred during the third and fourth centuries of our era, and all communication between

¹ "Minimâque computatione millies centena millia sestertiûm annis omnibus, India et Seres peninsulaque illa (Arabia) imperio nostro adi-munt Tanto nobis deliciæ et feminæ constant." Hist. Nat., lib. xii. cap. 18.

² Humboldt's "Fluctuations of Gold," pp. 6 and 7. The illustrious author follows Letronne, who gives the equivalent at 33,000 marks of silver, about £70,000.

³ "Appleton's Encyc.," v. 538, art. "Commerce." This is evidently upon the basis of 100,000,000 sesterces at 2*d.* sterling, or 4 c. American, each.

⁴ "Exportari aurum non oportere, cum sæpe antea senatus, tum me consule, gravissime iudicavit." Orat. pro L. Flacco, cap. 28.

Europe and Asia was lost until it was re-established by the Arabian traders in the seventh century.

Shortly afterwards the Venetians took up this trade, and supplying Asia with slaves, weapons of war, grain, ship and other timber, and iron, obtained in return gold, gold-dust and silver, beside spices, drugs, sugar, and other commodities.¹ By the twelfth century this trade had assumed permanence and extensive proportions. It had built up a number of rich and powerful republics in Italy, stayed the decadence of Europe, and created that brilliant period of refinement and art which is known by the title of the Renaissance.

Baron von Humboldt calls the eastern trade, *par excellence*, the spice trade, because the imports into Europe consisted for the most part of Oriental spices. It was the spice trade, says that illustrious author, that "accidentally caused the discovery of the new continent; it was this that led the Portuguese round the southern extremities of Africa to India, as it had the Greeks and Romans to Taprobane (Ceylon) . . . With what complaints do the writings of the Italians abound! What imprecations are heaped upon the Portuguese because they had penetrated by sea to India, and threatened to annihilate the spice trade of the Venetian, Pisan, and Genoese merchants! Cardinal Bembo calls it a *malum inopinatum*, and seeks for philosophical grounds of consolation. Petrus Martyr d'Anghiera writes to his learned friend Pompeius Lutus: 'Portugalenses trans æquinoctium aliamque Arcton aromatum commercia prosequantur. Alexandrinos ac Damascenos mercatores ad medullas extenuant.' The opinion propagated by the Genoese that the new route by the Cape of Good Hope would soon be relinquished, because the spices suffered from the sea-air in the long transit, found but little credence, and the long calumniated Amerigo Vespucci (only three years after Gama), with his usual acute-

¹ Jacob, vol. i. pp. 349-350. The statement in the original relates, however, to the ninth and tenth centuries.

ness, detected the right point of view here also. He observes, in a newly discovered letter to Lorenzo Pietro de Medici, 4th June, 1501, from the Cape de Verde islands, on meeting the remains of Cabral's fleet, on its return to the Tagus: 'You will soon hear great news from Portugal. The king has now a rich and most important commerce in his hands (*grandissimo traffico e gran ricchezza*). May Heaven lend its blessing thereto [Vespucci was at that time in the Portuguese pay]. Now will the spices go from Portugal to Alexandria and Italy, instead of, as hitherto, from Alexandria to Portugal. Such is the way of the world. (*Così va el mondo.*)' "

During the fifteenth century the trade to the East was indeed, as Humboldt states, chiefly for spices; but such had not always been the case. It had once consisted essentially of slaves and weapons on the one side, and the precious metals on the other.

Our first definite information relating to the commercial movement of specie between the continents begins with the shipments of silver from Acapulco to the Philippine Islands, which commenced during the sixteenth century, and did not cease until about the period of the Spanish-American Revolution. These are said to have amounted to about £200,000 a year. At the time that these shipments began, the Portuguese and Dutch were plundering the Indies, and the English were plundering the plunderers at sea. In this way a good deal of specie found its way to Europe.

At about the beginning of the seventeenth century intercourse with the East gradually assumed more of a commercial character; the rival Europeans kept the peace with one another, and specie began to flow from Europe to pay for spices, drugs, sugar, calico, &c. Specie was forbidden to be exported from Spain on penalty of death. It was also forbidden, though under a lighter penalty, from England and other countries.

But the exigences of trade triumphed over the interdict, and when the East India Company disregarded the law and commenced to ship silver from London, their proceedings merely elicited an outcry from the schoolmen. In 1663 this interdict, so far as England, the principal shipper of specie, was concerned, was repealed; and thenceforth the flow of silver was uninterrupted.¹

It is estimated that from first to last the net amount of specie sent from Europe and America to the Orient is equal to about £600,000,000, of which £440,000,000 were in silver, and £160,000,000 in gold. The account runs as follows:—

Period,	Silver.	Gold.	Total.
1565 to 1599	£10,500,000	£3,500,000	£14,000,000
1600 to 1699	24,937,500	8,312,500	33,250,000
1700 to 1809	264,000,000	88,000,000	352,000,000
1810	750,000	250,000	1,000,000
1811 to 1881	30,000,000	10,000,000	40,000,000
1832 to 1835	6,000,000	2,000,000	8,000,000
1836 to 1876 ²	200,000,000	103,000,000	303,000,000
	536,187,500	215,062,500	751,250,000
1836 to 1876, say for extra shipments to China .			20,750,000
Grand total to India and China, say			£772,000,000

From this sum is to be deducted the flow of specie from the Orient to Europe, of which, for a great part, only a rude approximation can be made. The account may be stated somewhat as follows:—

¹ For partial data relative to the flow of specie from England to the East, consult Macgregor's "Statistics," vol. iv. pp. 410, 432, 454, 468.

² Net retained imports into British India only.

Sums in millions of pounds sterling.

	Silver.	Gold.	Total.
Specie from Japan, <i>vide</i> chap. xvii. . . .	68·4	35·	103·4
Spoil of Malacca in 1511; and of other parts of the East during the 16th and 17th centuries; Nadir Shah's spoil of India in 1739; and other spoil taken during the 18th century, much of which found its way to Europe, say, for round numbers.	41·8	26·8	68·6
	<hr/> 110·2	<hr/> 61·8	<hr/> 172·

These sums being deducted from the previous ones will leave the net flow to the Orient about £600,000,000, as before stated.

Up to 1809 the estimates of the flow to Asia are taken from Jacob,¹ whose work had been read by Humboldt, and whose conclusions, even when they disagreed with those previously arrived at by Humboldt,² were acquiesced in by the latter; who, moreover, mentioned Jacob's work with great respect.³ From 1810 to 1831 the estimates are founded upon the partial statistics published by Jacob and Macgregor;⁴ and from 1832 to 1876 they are derived, so far as concerns India, from the official reports published by the British Silver Commission of 1876.⁵ The estimates of Forbonnais, Gerboux,⁶ and Danson⁷ have been rejected as incomplete.⁸

¹ Jacob, vol. ii. pp. 68, 126, 197, 214. ² Ibid. vol. ii. p. 196.

³ Humboldt's "Fluctuations," p. 16.

⁴ Jacob, vol. ii. p. 322, and Macgregor, iv. pp. 404, 410, 454.

⁵ "Rep. Parliamentary Com. on Depreciation of Silver."

⁶ Jacob, vol. ii. p. 195.

⁷ "London Statistical Journal," vol. xiv.

⁸ For information on the recent and prospective flow of specie to India, see minute by the present writer published in "Report U. S. Monetary Commission," vol. i., appendix, pp. 81-89. Consult also D'Avenant's Works, ii. 82.

Mr. Danson has, however, been followed for the period up to 1831 in respect of the proportions of silver to gold. The estimates of the flow of specie from Asia to Europe are based upon the considerations alluded to in the text and at foot.¹

¹ For surreptitious export of precious metals from China, see Postlethwayte's "Dic. Com.," arts. "China" and "Gold." For other allusions to same movement, see Jacob, 189, 190, 367, and "Rep. U. S. Mon. Com.," i. app. 556.

CHAPTER XXV.

WORLD'S STOCK OF THE PRECIOUS METALS.

The world's stock of coin in ancient times not ascertainable—Mr. Jacob's errors in calculating it—The Roman imperial requirements for revenue under Vespasian mistaken for the stock of coin—This sum was set forth in numeraries, which have no necessary relation to coins—The Roman method of notation extremely liable to mistakes—Jacob's calculation of the ancient stock of coin improbable—His calculations for later times our best authority on the subject—Stock of coin at various periods since the discovery of America—Comparison with population—Diminution of the stock during the eighteenth century—Again, during the Spanish-American revolution—Present tendency of the stock—Stock in particular countries.

THE main purpose of Mr. William Jacob's history of the precious metals, and that one in the pursuit of which he was led into those many interesting digressions which contribute to greatly enhance the value of the work, was to examine "the source of those large accumulations of gold and silver which are represented to have existed in the early ages of the world, of their gradual increase in quantity, and the causes of the disappearance of a large portion of them."

Unaware, or careless of the fact, that in many of the States of antiquity, notably Greece, Carthage, and Rome, numenary moneys were employed as currency in certain periods of their progress, the gifted author was led to assume that gold and silver alone, or at least principally, were used as measures of value, and in consequence he was induced to estimate the accumulated stocks of these metals in ancient times at sums which, in the light of this and other considerations, seem far too excessive.

Avoiding any precise estimate of these sums until the Augustan age, he begins for that period with the assumption that the stock of the precious metals in the Roman Empire, which he regards as tantamount to all the European world,

amounted to about £358,000,000. Having made this assumption he next proceeds to calculate, from the conditions of supply and consumption, particularly from the ascertained loss in the weight of coin from abrasion,¹ the vicissitude of this stock of metal, from time to time, that is to say, every thirty-six years until the year A.D. 806, and afterwards every one hundred years until the beginning of the present century; and arrives at conclusions which, ever since they were published, have commanded the respect of the learned world.²

It is not proposed to question these calculations for any period subsequent to the discovery of America, because for these periods such abundance of evidence is advanced by Mr. Jacob and others concerning the supplies and accumulations of the precious metals as to leave no room for doubt concerning their reasonable accuracy. With regard to the previous periods the considerations above advanced, together with some others presently to be set forth, render it quite evident that Mr. Jacob's hypothetical calculations are untenable. The basis of these will now be given in the author's own words. Says Mr. Jacob: "We find in Suetonius that Vespasian, when he succeeded to the imperial dignity, asserted that a sum equivalent to £322,916,600³ was necessary to support the commonwealth. This amount could not have reference either to the annual revenue or to

¹ Upon the basis of numerous experiments, made in the British Mint, the details of which are published in the appendix to Mr. Jacob's work, he determined this to be equal to about one three-hundred-and-sixtieth part annually, or a thirty-sixth part in ten years. Jacob, vol. i. p. 224.

² Humboldt, "Fluctuations of Gold," says that Mr. Jacob's work deserves the highest consideration. Tooke (Newmarch) vi. 359. considers it "the highest authority to which we can appeal."

³ "Quadrigenties millies (scilicet II. S. Vespasianus) statim initio sui principatus opus esse professus est, ut republica stare posset."—Suetonius in Vespasiano, cap. xvi. This passage reads: "*He (Vespasian, understood) said, at the outset of his reign that, in order that the State should be able to stand, there was need of four hundred thousand*" (hundreds of thousands of sesterces, understood). Four hundred thousand hundreds of thousands equal forty thousand million; and this is the sum of numery sesterces which Arbuthnot, Adam, and Jacob have converted into sterling gold!

the accumulation in the public treasury ; for the produce of neither of those departments at any period could have yielded so large a sum. It is not, however, unreasonable to suppose that it bore reference to the whole mass of coined money at that time known, or believed, or supposed to be in circulation, within the boundaries of the republic. Assuming then that this sum was nearly the amount of the whole stock of current money, we may, without relying on its precise accuracy, venture to make use of it as the foundation of an estimate of the loss created by abrasion in the course of the period we have brought under consideration. Vespasian began his reign, and uttered the opinion we have stated, about two years after the death of Nero. In the time of Nero the aureus had declined in value, from the reign of Augustus, at the rate of somewhat more than ten per cent., and we now assume that the coined money, in this period, had decreased in nearly the same proportion. With these views we should calculate the quantity of money in the time of Augustus to have been about £358,000,000.”¹

It is to be objected to this hypothesis—1st, that the sum mentioned by Suetonius refers quite plainly to the revenues which were required to support the State, and these may have included a requirement for the payment of debts during an understood term. This term may have been of one, two, five, or ten years, according to the custom of the period. Estimates of this character are often made in modern States for a period of several years together, and it is therefore not at all necessary to suppose, as Mr. Jacob has done in this case, that, if to the revenue at all, it referred to the “annual” revenue of Rome.

2nd. Although long previous to the period of Vespasian, A.D. 70-79, the copper numery system of the Roman Commonwealth had perished and given way to a silver, and afterwards, in Cæsar’s time, to a gold intrinsic currency, yet there are not wanting evidences that during the Dictator’s reign coppers had again become numeraries—at least that they were highly overvalued. There is no

¹ Jacob, vol. i. p. 224.

other explanation for the fact that Caligula, A.D. 37-41, hastened to coin enormous quantities of them, and without consent of the Senate.¹ It is probable that during the period when they were wholly or nearly intrinsic (from B.C. 207 to B.C. 46 or thereabouts) the copper coins of Rome were exported in large quantities to Spain and the other provinces, and that the resulting scarcity at Rome had converted them once more into numeraries, or at least rendered or left them highly overvalued. As the sum mentioned by Suetonius is named in (understood) sesterces, and as the sesterce of this period was of copper,² and therefore highly overvalued, the rate at which it has been converted by Jacob into intrinsic pounds sterling of gold is erroneous; for this conversion (after Adam and by him after Arbuthnot)³ is made upon the basis that the sesterce was always a silver coin, or at least a sum of intrinsic silver, that is to say, silver coined at its bullion value. Dr. Adam says the sesterce was a silver coin, the value of which was two asses and a half, "and often called absolutely nummus, because it was in most frequent use."⁴ The fact that it was called "nummus," a numerary, should have guarded this learned author against the view that it was an intrinsic coin: but unfortunately it did not. Pliny, who must be regarded as better authority on the subject, informs us not only that the sesterce was of copper, but also that it was made of "aurichalcum," a peculiar sort of copper (probably to guard against counterfeiting), while the as was made of the common copper of Cyprus.⁵ Mr. Noel Humphreys published

¹ Noel Humphreys' "Ancient Coins," p. 155.

² "Though the sestertius was originally a silver coin, its value was estimated in copper." Adam Smith, bk. i. ch. 5. The copper sesterce was first issued in the time of Augustus, and "almost immediately became nearly the only monetary unit used in calculation." Humphreys' "Manual of Coins," i. 301.

³ "The statements of Arbuthnot are not much to be depended upon." J. R. MacCulloch, "Com. Dic.," ed. 1856, p. 1063.

⁴ "Roman Antiq.," p. 427.

⁵ Pliny's "Nat. Hist.," bk. xxxiv. ch. 2; Bohn's ed. vol. vi. p. 149.

fac-similes of the copper sesterce, vast numbers of which are still extant in the cabinets of numismatists.

At the period of Vespasian there were also sesterces of silver (chiefly from previous reigns¹): just as at the present time the Americans have three-cent pieces of nickel and silver. But this fact does not help Mr. Jacob, for at this period all the silver coins of Rome were of limited and qualified legal tender, and overvalued. In other words, a given sum of sesterces, whether they were of copper or silver, would purchase more gold before than after being melted; just as at the present time a given sum in either the nickel or base-silver three-cent pieces of the United States will purchase more gold before than after being reduced to crude metal. These three-cent pieces are token coins, and so were the Roman sesterces, their value being due not to the metal they contained, but to the stamp of the government, and the law which made them limited legal tenders.

On the general subject of the modern misapprehension of sums in ancient Roman money, the Marquis Garnier, who devoted a life of study to Roman antiquities, says that the translations of these sums are simply preposterous.

3rd. The Roman method of notation was extremely liable to error. In the sum mentioned by Jacob, not only is "sesterces" inferred or understood, but so also is "hundreds of thousands of;" the only portion of the supposed sum actually written in the original being "four hundred thousand." The method of notation used by the Romans is explained in Appendix A to this chapter.

4th. The sum which Jacob assumes to have represented the stock of money in Europe at the Vespasian period of the Roman Empire, when viewed as such, is inadmissible. The population of Europe at this period, according to Merivale, did not exceed 60,000,000, and this number, when divided into the sum assumed by Jacob, gives for result an intrinsic gold or silver currency equal in amount to six

¹ The silver sesterce had almost disappeared during the reign of Augustus. Humphreys' "Manual," pp. 302-3.

pounds sterling per head of population. As even after the opening of Potosi Europe never possessed a stock of the precious metals amounting per capita to much more than one-half of this, the result arrived at by Mr. Jacob must be regarded as excessive.¹ There is no doubt that Mr. Jacob's general conclusion that the European stock of specie gradually diminished from whatever it was in the days of the Empire to about the sum he estimates it to have amounted to at the period of the discovery of America, is correct; it is only his estimate of the stock in the ancient times that is doubted.

As to the stock at the period of the discovery, we have, in addition to Mr. Jacob's estimate, a statement made by Mr. Gregory King in 1696, which, although it was published at the time that Jacob wrote, is not alluded to by that writer, and probably escaped his researches. This statement affords support to and confirms the substantial accuracy of Mr. Jacob's view with regard to the stock at the period mentioned. Mr. King estimated the European stock of coin, bullion and plate, at the time of the discovery of America at £45,000,000. Mr. Jacob estimated the coin alone at £34,000,000. This is regarded as a substantial agreement.²

¹ In A.D. 1700 the stock per capita was £3 6s., and since that period it has never been so great. It is now about £1 16s. per capita.

² Concerning subsequent dates these writers disagree. The following table affords a comparison of their estimates:—

Year.	Year.	King.	King.	Jacob.
King.	Jacob.	Coin, bullion and plate.	Coin and bullion only.	Coin only.
1488	1492	£45,000,000	—	£34,000,000
1588	1599	100,000,000	—	130,000,000
1688	1699	225,000,000	£146,000,000	297,000,000

Mr. Jacob having devoted much greater consideration to the subject, and having had before him the very elaborate data of Baron von Humboldt, has been preferred as an authority in these pages. Mr. King's

Following Mr. Jacob for the various periods between A.D. 1492 and 1828, and the most credible authorities for subsequent dates, and following other credible authorities for estimates of the population of the Western World, we have the following comparative view of the progress of gold and silver money and population at the periods named.

Table showing the estimated stock of Gold and Silver Coin, and the Population of the European world from time to time since the Discovery of America.

Period A. D.	Authority for Population.	Population.	Authority for Stock of Coin.	Stock of Coin.	Stock per Capita.
				£	£ s. d.
1492	Estimate	40,000,000	Jacob	34,000,000	0 16 0
1636	Estimate	80,000,000	Estimate	240,000,000	3 0 0
1690	Petty-Jacob	85,000,000	Jacob	250,000,000	3 0 0
1700	Voltaire	90,000,000	Jacob	297,000,000	3 6 0
1776	Voltaire	110,000,000	Jacob	275,000,000	2 8 0
1808	Humboldt	200,000,000	Jacob	380,000,000	1 18 0
1828	Balbi	240,000,000	Jacob	313,000,000	1 6 0
1838	Humboldt	260,000,000	Estimate	270,000,000	1 0 0
1839	MacCulloch	265,000,000	Storch	284,000,000	1 0 0
1850	Putnam	300,000,000	MacCulloch	400,000,000	1 7 0
1860	Stat. Journal	330,000,000	Estimate	560,000,000	1 14 0
1870	Behm & Wagner	370,000,000	Seyd	720,000,000	1 18 0
1877	Behm & Wagner	400,000,000	Estimate	700,000,000	1 15 0
1879	Estimate	410,000,000	Estimate	650,000,000	1 12 0

The bases for many of the foregoing figures will be found set forth in the Minute on the Population and Specie of the Western World, published in the Report of the Monetary Commission, and the authorities therein quoted.¹ They are omitted from this work from considerations of space. The basis for the last line will be found in Appendix B to this chapter. In order to make the dates in the population estimates tally with those in the estimates of coined money, proper allowances have been calculated, and the estimate as thus amended has been credited to the author who furnished its

statement was first reprinted by Mr. Chalmers in 1801, and has since been republished by Mr. Newmarch in Tooke's "History of Prices," vol. vi. p. 667.

¹ Some clerical errors which crept into the original publication ("Report," App. p. 71) are herein corrected. Some alterations are also introduced.

foundation. In a similar way additions have been made for the European population of America, &c., to estimates of the population of Europe proper.

The fact that the stock of coin in 1776 is put at less than that in 1700 may lead to a doubt of its correctness ; but it seems to be well authenticated that until the development of the great silver lodes of Biscaina, Sombrerete, and Valenciana, in Mexico, towards the end of the last century, the supplies of the precious metals were not only inadequate to the demands of commerce, but that the stock of coin in Europe and America absolutely declined. The falling-off of the stock from 1808 to 1839 has been admitted by Humboldt, Jacob, MacCulloch, Tooke, and other writers on the subject.

Referring now to the general and comparative aspects of the foregoing table, it will be observed that at the period of the discovery of America the Western World started with a stock of coin amounting to about 16s. per head of population, and that this proportion continued to increase until the opening of the eighteenth century, when it amounted to £3 6s. per capita.

During this period plundering, discovery, and commercial adventure were stimulated to the extremest limits. The seas and bays of the entire world were explored, commerce was extended into the Americas, Africa, India, China, Japan, and the islands of the South Sea, and colonies were founded all over the world.

The social organism was stimulated into the greatest activity. This was the period of the Revolution, Habeas Corpus Act, and Bill of Rights, in England ; of the numerous risings of the peasantry, the Edict of Nantes, and the Fronde in France ; of the Republic in the Netherlands ; of the Protest and Thirty Years' War in Germany ; and of the Reformation throughout Western Europe generally.

After this period the stock of coin diminished from £3 6s. per capita in 1700 to £2 8s. per capita in 1776, £1 18s. per capita in 1808, £1 6s. per capita in 1828, and £1 per capita

in 1838. It is noticeable that coincidently with this fall of the stock of coin the Western World exhibited all the marks of arrested development and social perturbation.

This was the period during which all the great national debts arose; when France, England, Russia, Germany, the Papal States, the American Colonies, the United States, Brazil, and many other countries, suspended specie payments, and when Europe and America were almost constantly shaken with insurrections and wars.

It was the period of the American and French revolutions; of the separation of Mexico and the South American colonies from Spain; of the Chartist agitation and riots in England; and of popular commotion in all the countries of the Occident.

Assignats, wild cat banks, ruinous paper experiments, and the open repudiation of their debts by great corporations and States were the financial characteristics of the period.

Before the eighteenth century the stock of coin and of money was the same, for there was little circulating paper in Europe beyond the confines of the Italian republics.

After the beginning of the eighteenth century the stock of coin was not the same as the stock of money, but only the basis of it. At that time the Bank of England began to issue circulating notes, and this example was soon followed by other institutions. In 1716 circulating notes were issued by the Royal Bank of France; but between 1720, when this institution failed, and the issue of assignats by the French revolutionary government in 1789, no paper issues of any considerable amount were made in Europe proper; though, since the beginning of the century, they had become quite common in the American colonies. Substantially, therefore, the stock of coin and of money were much the same from the beginning of the eighteenth up to nearly the beginning of the present century. After that period they began to differ very considerably.

Of the stock of coin estimated to have been in existence in 1870 about one-third consisted of silver. The demoneti-

zations of this metal which since that date have been effected in several of the leading countries of the world, have resulted in reducing the general stock of coin, which, at the present time, is something below its amount in 1877. The progress of the demonetization of silver threatens to reduce this stock still further, and the present tendency is therefore towards a smaller stock of specie in the European world.

With regard to the stock of coin in particular countries the author has examined a great number of authorities, and from these has compiled the data on the subject to be found in Appendix B to this chapter. From these it will be seen that at the present time the stock of coin in the Western World amounts to over £600,000,000, and that two-thirds of this amount are held in France, Great Britain, and the North German Empire.

Estimates of the stock of coin existing in given countries are usually founded upon the statistics of coinage and foreign commerce, and as a rule are excessive. For example, it is considered very doubtful that either France, Great Britain, or Germany contains at the present time any such stocks of coin as are usually credited to them, and as quite probable that, could the truth be ascertained, these would exhibit a considerable reduction.

APPENDIX A TO CHAPTER XXV.

THE ROMAN METHOD OF NOTATION.

“THE Romans usually computed sums of money by *sestertii* or *sestertia*. *Sestertium* is the name of a sum, not of a coin.

“When a numeral noun is joined with *sestertii*, it means just so many sesterces; thus, *decem sestertii*, ten sesterces; but when it is joined with *sestertia*, it means so many thousand sestertii; thus, *decem sestertia*, ten thousand sesterces.

"*Sestertium*, *mille sestertii*, *mille nummi* vel *sestertii nummi*; *mille sestertium*, *mille nummum* vel *sestertium*, *nummum mille*; H.S., vel H.S. 2500 *aris*, sc. *asses*; 250 *denarii* vel *drachmæ*, denote the same sum.

"When a numeral adverb is joined to *sestertium*, it means so many hundred thousand *sestertii*; thus *quadragies sestertium* is the same with *quadragies centena millia sestertiorum nummorum*, or *quater millies mille sestertii*, four millions of *sestertii*. Sometimes the adverb stands by itself, and denotes the same thing; thus, *decies*, *vicies* vel *vigesies*, sc. *sestertium*; expressed more fully, *decies centena*, sc. *millia sestertium*; and completely, Cic. Verr. i. 10 and Juv. iii. 70. So also in sums of brass, *decies aris*, sc. *centena millia assium*. For when we say *deni aris*, *centum aris*, &c., *asses* is always to be supplied.

"When sums are marked by letters, if the letters have a line over them, *centena millia* is understood, as in the case of the numeral adverbs; thus, H.S.[—]M.C. signifies the same with *millies centies*, i.e., 110,000,000 *sestertii* or *nummi*, £888,020 16s. 8d.; whereas H.S.M.C. without the cross line denotes only 1100 *sestertii*, £8 17s. 7½d.

"When the numbers are distinguished by points in two or three orders, the first towards the right hand signifies units, the second thousands, and the third hundreds of thousands; thus, III. XII. DC. HS. denotes 300,000, 12,000, and 600 HS., in all making 312,600 *sestertii*, £5,047 3s. 9d.¹

"Pliny says that seven years before the first Punic war there was in the Roman Treasury *auri pondo* XVI. DCCCX., *argenti pondo* XXII. LXX., *et in numerato* LXII. LXXV. CCCC., that is, 16,810 pounds of gold, 22,070 pounds of silver, and in ready money, 6,275,400 *sestertii*, £50,660 15s. 7d. But these sums are otherwise marked thus, *auri pondo* XVI. M.DCCCX., *argenti*, XXII. M. LXX., *et in numerato* LXII. LXXV. M.CCCC.

¹ The author does not hold himself responsible for Dr. Adam's translations of Roman sums into sterling. For further remarks on Roman notation, see Humphreys' "Manual," pp. 377-8.

“ When *sestertium* neut. is used, pondo is understood, that is, two pounds and a half of silver, or a thousand *sestertii*.

“ When H.S. or *sestertium* is put after *decem millia* or the like, it is in the genitive plural for *sestertiorum*, and stands for so many *sestertii*, which may be otherwise expressed by *decem sestertia*, &c. But *sestertium*, when joined with *decies* or the like, is in the nominative or accusative singular, and is a compendious way of expressing *decies centies sestertium*, i.e., *decies centum vel decies centena millia sestertium* v. *sestertiorum*.”—Adam, “ Roman Antiquities,” p. 429.

Nummus, coin (plural, *nummi*), was sometimes used as equivalent to *sestertius*, or generally as money.

Numerato is translated by Dr. Adam as “ ready money ;” but there are reasons for believing that it meant “ numerators,” or “ numeraries,”¹ expressions which, in an age like that of England in the time of Dr. Adam, when the existence of numerary systems was unheard of and unsuspected, it is not to be supposed would be employed in translating.

IIS. or HS. (a contraction of *duo et semis*, because the sesteree was at one time equal to two and a half asses) was employed as a sign for *sestertii* ; just as at present \$ is employed as a sign for dollars.

APPENDIX B TO CHAPTER XXV.

STOCKS OF COIN IN PARTICULAR COUNTRIES.

Stocks of coin in England and Wales, Great Britain, and the United Kingdom at various dates from the earliest times to the present—France—North German Empire—European Russia—Coin and paper currency of the United States, annually, since 1775—Stocks of coin in Spain—Portugal—Austro-Hungarian Empire—Holland—Sweden—Italy—Stocks of coin at the latest dates in each country of the European world.

The following data are the results of many years' accumulation on the part of the present writer. Except in Table V.

¹ Reid's dictionary gives for synonyms, nummary (pl. nummaries) and nummulary (pl. nummularies).

each estimate is by a separate author, and it would indeed be wonderful if a mass, coming from such a multitude of sources, failed to contain errors and incongruities. In order to put the reader upon his guard the most noticeable of these are pointed out in the remarks attached to the tables. For example, the fourth and fifth estimates in Table I. by Sir Charles D'Avenant are marked as apparently "excessive." Estimates known to have been constructed hypothetically have been rejected; yet, as it is often difficult to detect them, some have doubtless crept into the tables unawares.

I. Table showing the Stock of Gold and Silver Coins¹ in ENGLAND, afterwards GREAT BRITAIN, and afterwards the UNITED KINGDOM,² at various dates. Sums of coin in millions of pounds sterling; of population in millions.

ENGLAND AND WALES.

Year.	Gold.	Silver.	Total Coin.	Popula- tion. ³	Coin per cap.			Remarks.
					£	s.	d.	
1560	·3	·8	1·1	4·0	5	8		Tooke's "Hist. Prices," vi. 374.
1600	1·5	2·5	4·0	4·3	18	6		D'Avenant's Works, written 1711, Ed. 1771, i. p. 364.
1625	—	—	5·5	4·7	1	3	9	Ibid. i. p. 364.
1660	—	—	14·0	5·3	2	12	10	Ibid. i. p. 365. Seems excessive.
1668	—	—	18·5	5·2	3	11	4	Ibid. i. p. 367. Seems highly ex- cessive.

¹ Some authors include in "coin" all bullion in banks or other depositories.

² The conquest of Ireland took place in 1172, and it was governed as a dependency until 1801, when it was incorporated into the British monarchy. Wales was conquered in 1283, and at once incorporated into the monarchy. Scotland was united in 1603, and governed directly by the British crown; but it was not incorporated into the monarchy until 1707. As a general thing in speaking of the coin of the realm, authors previous to the middle of the eighteenth century allude only to England and Wales; from that time until after the resumption of specie payments in 1821 they usually include Scotland, and after 1821 the whole United Kingdom is commonly meant; but there are exceptions to this rule.

³ The population here given is that of England and Wales up to and including the year 1750; from 1750 to 1821 the population includes Scotland, and after 1821 Ireland.

Year.	Gold.	Silver.	Total Coin.	Population.	Coin per cap.			Remarks.
					£	s.	d.	
1688	3·0	8·5	11·5	5·5	2	2	0	Gregory King in 1688, quoted in Tooke, vi. 374 and 669.
1689	—	—	7·0	5·5	1	5	8	Patterson's "Econ. Cap." 218. Seems too low.
1696	—	—	—	—	—	—	—	<i>Bank of England suspended, May 4, 1696 to . . .</i>
1700	—	—	—	—	—	—	—	Patterson's "Econ. Cap." says coin and paper, 12·5.
1707	—	—	9·6	5·7	1	13	8	MacCulloch, "Encyc. Brit.," art. "Money."
1711	—	—	—	—	—	—	—	D'Avenant says coin and paper, 11·5.
1720	—	—	10·0	6·2	1	12	0	Postlethwayte's "Dict. Com.," art. "Credit."
1750	—	—	—	—	—	—	—	Woodbury's "Report" says coin and paper, 18 24.

GREAT BRITAIN.

1757	—	—	20·0	8·0	2	10	0	Harris on "Coins," p. 96. Hypothetical and excessive.
1762	—	—	16·0	8·2	1	19	4	Anderson, quoted in Seaman's "Progress," 248.
1777	—	—	15·0	8·9	1	13	8	Dr. Price, quoted in Seaman's "Progress," 248.
1780	—	—	20·0	9·7	2	1	3	Morrison in Tooke, vi. 703.
			to 26·0		to 2	13	3	
1786	—	—	23·0	10·0	2	6	0	Chalmers, Woodbury, MacCulloch.
1786	—	—	20·0	10·0	2	0	0	Chalmers in "Putnam's Encyc.," art. "Coin."
1796	—	—	20·2	10·5	1	18	6	Tooke.
1796	—	—	20·0	10·5	1	18	0	Chalmers; also Tom Paine's "Funding System." He adds Bank Notes, £60,000,000.
1797	—	—	—	—	—	—	—	<i>Bank of England suspended, Feb. 26, 1797, to May 1, 1821.</i>
1799	—	—	26·4	10·7	2	9	3	White's Report to U.S. Congress, 1832. It adds paper, 1154.
1814	—	—	18·0	12·0	1	10	0	Chevalier Storch in Seaman's "Progress," 248.
1815	—	—	8·1	13·0	0	12	5	Hopkins and Martin.

UNITED KINGDOM.

1776	—	—	30·0	12·5	2	8	0	Dr. Smith says 18 to 30 millions, preferring the latter.
1776	—	—	30·0	12·5	2	8	0	MacCulloch in "Encyc. Brit." He adds paper, 59·3.
1798	40·0	—	—	—	—	—	—	Sir G. Rose in Tooke, vi. 703. Seems excessive.
1800	—	—	37·0	15·5	2	8	0	Phillips in Haydn's "Dic. Dates."

Year.	Gold.	Silver.	Total Coin.	Popula- tion.	Coin per cap.			Remarks.
					£	s.	d.	
1800	—	—	—	—	—	—	—	Coin and paper, £57,600,000. Anonymous.
1810	—	—	—	—	—	—	—	Paper, £44,000,000. Gallatin's Report U.S. Treasury.
1821	—	—	—	—	—	—	—	Resumption by Bank of England.
1829	—	—	48·7	24·0	2	0	0	Marshall. Probably meant to in- clude paper.
1829	—	—	30·0	24·0	1	4	10	Jacob's "Pr. Metals," vol. ii. p. 354.
1830	—	—	37·5	24·3	1	10	11	White's Report to U.S. Congress, 1832. Also Woodbury.
1830	—	—	38·0	24·3	1	11	4	Chancellor of the Exchequer in Seaman's "Progress."
1830	28·0	13·0 ¹	41·0	24·3	1	13	8	Duke of Wellington in "Putnam's Encyc.," art. "Coin."
1831	22·0	8·0	30·0	24·7	1	4	5	Ex. Doc. 2nd Sess. 21st U.S. Con- gress Rep. No. 94, p. 2.
1833	—	—	42·4	25·3	1	13	8	Woodbury's Report.
1834	—	—	42·8	25·6	1	13	8	Woodbury's Report.
1834	—	—	31·7	25·6	1	4	10	Marshall. He adds paper, 24·5.
1839	—	—	48·0	26·3	1	16	5	Patterson.
1840	—	—	45·0	26·5	1	14	0	"Putnam's Encyc.," art. "Coin in England."
1841	—	—	43·2	26·8	1	12	10	Putnam.
1843	—	—	30·0	27·3	1	2	0	MacCulloch, "Com. Dic.," art. "Coins."
1844	36·0	—	—	27·6	—	—	—	Tooke, vi. 701.
1848	—	—	60·0	27·8	2	3	4	Levasseur, "Stat. Jour.," 1861, p. 48. Excessive.
1851	—	—	38·5	27·4	1	9	3	Weguelin in "Stat. Jour.," 1861, p. 48. Seems too low.
1856	—	—	100·0	28·0	3	11	4	Levasseur, "Stat. Jour.," 1861, p. 48. Excessive.
1856	69·0	—	—	28·0	—	—	—	Tooke, vi. p. 701. He estimates higher on subsequent pages.
1857	—	—	50·0	28·2	1	15	9	Weguelin in "Stat. Jour.," 1861, p. 48. Seems too low.
1858	—	—	80·0	28·4	2	16	0	MacCulloch, "Encyc. Brit.," 8th ed. xv. 425.
1860	—	—	60·0	28·8	—	—	—	Newmarch says coin and paper, 96. There were 37 paper.
1864	—	—	110·0	29·6	3	14	6	Patterson, "Econ. Cap.," p. 289.
1869	—	—	100·0	30·9	3	4	10	Hendricks and others in "Rep. U.S. Mon. Com.," i. app. 475. ²
1870	130·0	15·0	145·6	31·2	4	12	10	Ernest Seyd. Highly excessive.
1876	133·0	16·5	149·5	33·1	4	10	6	Ibid. in "Rep. U.S. Mon. Com.," i. app. 225. Highly excessive.
1879	—	—	104·0	34·2	3	0	10	

¹ Includes copper coins.² "Journal Soc. Arts," 1876, p. 310. From the coinage statistics, but
no reduction made for coins minted for Colonies and foreign countries.

II. Table showing the Stock of Gold and Silver Coins in FRANCE at various dates. Sums of coin in millions of pounds sterling; of population in millions.

Year.	Gold.	Silver.	Total Coin.	Popula- tion.	Coin per cap.			Remarks.
					£	s.	d.	
1688	5·0	18·0	23·0	20·0	1	2	10	Gregory King, in 1688, quoted in Tooke, vi. 670. He adds bullion, £1,500,000.
1716	—	—	45·0	20·0	2	5	3	John Law, quoted in Seaman's "Progress," 248.
1775	—	—	90·0	23·5	3	18	0	Necker Admin. des Finances.
1784	—	—	88·0	24·8	3	11	4	Necker in Tooke, vi. 79, and Humboldt, iii. 429.
1789	—	—	86·0	25·0	3	8	10	Necker.
1789	—	—	70·0	25·0	2	16	10	Peuchet. See Tooke i. 137.
1790	—	—	88·0	26·0	3	7	9	Arthur Young's "Travels in France."
1791	—	—	80·0	26·0	3	1	8	Arnould in Humboldt's "New Spain," iii. 429.
1801	—	—	91·6	27·3	3	7	4	Desrotours in Humboldt, iii. 429.
1804	—	—	74·0	28·4	2	14	0	Baron von Humboldt in Seaman's "Progress of Nations," 248.
1805	—	—	102·0	29·0	3	10	6	Peuchet and Gerboux in Humboldt, iii. 429.
1814	—	—	84·0	29·2	2	17	8	Chevalier Storch in Seaman's "Progress," 248.
1829	—	—	50·0	32·0	2	16	5	Gallatin's "Report." He adds paper, £10,000,000. Jacob, vol. ii. p. 355, says coin and paper, £80,000,000 to £100,000,000.
1833	—	—	105·0	33·0	3	7	7	Woodbury and Marshall. They add paper, £6,000,000.
1834	—	—	105·4	33·0	3	7	7	Ibid.
1837	—	—	114·0	33·5	3	8	0	M. Moreau de Jonnés in Tooke, vi. 80.
1847	—	—	90·0	35·5	2	10	10	M. Benoist Fould in Chevalier's "De la Monnaie," p. 326. M. Fould says £90,000,000, and others £100,000,000.
1847	—	—	88·0	35·5	2	9	8	M. Poisat in Tooke, vi. 80.
1848	4·0	116·0	120·0	35·6	3	7	4	MM. Dumas and De Colmont in Tooke, vi. 80.
1848	—	—	80·0	35·6	2	4	10	M. Thiers.
1848	—	—	—	—	—	—	—	Bank of France suspended, March 15, 1848, to Aug. 6, 1850.
1848	—	—	—	—	—	—	—	Newmarch says coin and paper, £80,000,000.
1848	—	—	120·0	35·6	3	7	4	Victor Bonnet in "Example of France," N. Y., Appleton, 1875, p. 49.
1849	3·0	100·0	103·0	35·6	2	18	0	Tooke's own estimate, "Hist. Prices," vi. 80.
1852	—	—	—	35·8	—	—	—	De Puynode says coin and paper, £140,000,000.

Year.	Gold.	Silver.	Total Coin.	Population.	Coin per cap.			Remarks.
					£	s.	d.	
1860	—	—	—	37·8	—	—	—	Carey says coin and paper, £180,000,000. Paper was £2,000,000.
1860	—	—	144·0	37·8	3	16	0	Moran on "Money," p. 102. Carey's "Credit System," 71 and 73.
1864	—	—	160·0 to 200·0	38·0	4	4	0	Duke de Morny in Patterson's "Econ. Cap.," p. 74.
1869	—	—	240·0	38·2	5	5	3	
1871	—	—	—	—	6	5	8	Victor Bonnet's "Example of France," p. 50. Excessive. <i>Payment of the German War Indemnity. Suspension of the Bank of France.</i>
1873	—	—	130·0	36·1	3	12	0	"Rep. U.S. Bu. Stat.," Sep. 1873, for paper add £112,000,000.
1876	—	—	200·0	36·7	5	8	10	M. Cernuschi, "Rep. U.S. Mon. Com.," i. 72. ¹
1879	—	—	204·0	37·3	5	10	0	Estimate by the present writer.

III. Table showing the Stock of Gold and Silver Coins in the NORTH GERMAN EMPIRE at various dates.² Sums of coin in millions of pounds sterling; of population in millions.

Year.	Gold.	Silver.	Total Coin.	Population.	Coin per cap.			Remarks.
					£	s.	d.	
1867	3·0	60·0	63·0	38·5	1	12	10	"Rep. U.S. Mon. Com.," i. app. 195.
1873	16·0	64·0	80·0	41·5	1	18	6	Ibid. pp. 77 and 79, paper £128,000,000.
1876	40·0	40·0	80·0	43·0	1	17	3	Estimates based on coinages and operation of new coinage laws. [1879. Excessive.
1878	60·0	20·0	80·0	44·0	1	16	5	
1879	77·5	44·8	122·3	44·0	2	15	6	Soetbeer in Lond. "Econ." Mar. 8,

¹ In the "London Journal of the Society of Arts," for March 10, 1876, p. 316, Mr. Ernest Seyd, a distinguished English authority, estimates (from the coinages) the metallic circulation of France for the year 1870 at £344,000,000; but, in his evidence before the British Parliamentary Commission on Silver (p. 56 of their report) he admits this estimate to be excessive. He had not deducted from it the metallic portion of the indemnity paid to Germany; neither had he made a sufficient allowance for exports of metal. He also admits that other authorities regard this estimate as too high. M. Cernuschi, an equally distinguished authority, and one perhaps even better informed on this subject, estimates the total metallic circulation of France at only £200,000,000. As for the estimate of £402,000,000 in London "Economist," March 8, 1879, p. 54, it is simply preposterous.

² The stock of coin in Prussia (only) in 1804 (with a population of

IV. Table showing the Stock of Gold and Silver Coins in EUROPEAN RUSSIA at various dates. Sums of coin in millions of pounds sterling; of population in millions.

Year.	Gold.	Silver.	Total Coin.	Popula- tion.	Coin per cap.			Remarks.
					£	s.	d.	
1814	—	—	6·8	42·4	0	3	3	Storch in Seaman, 248. Storch adds £3,600,000 for copper coins in circulation.
1851	30·8	21·2	52·0	60·1	0	17	3	"Gazette de St. Petersburg," Oct. 12, 1852, says 190,000,000 roubles gold and 136,000,000 roubles silver. Converted into sterling at the equivalent given by "Parl. Rep. on Silver," No. 2, p. 87, whence this information is derived.
1872	27·6	9·2	36·8	71·3	0	10	4	Estimate. Add £102,000,000 paper.
1876	30·0	20·0	50·0	73·5	0	13	8	"Parl. Rep. on Silver," No. 2, p. 87, adds 563,000,000 roubles = nominally £90,000,000 in inconvertible paper. Ibid. p. 87. See also upon gold in bank, ibid. No. 1, app. p. 6.

V. Table showing the Currency of the UNITED STATES from 1775 to 1878 inclusive. Sums in millions of pounds sterling.

Year.	Coin.	United States and National Bank Notes.	State Bank Notes.	Total Paper.	Total Currency.	Population.	Currency, per Capita.		Remarks.
							£	s. d.	
1775	1·2	—	—	1·0	2·2	2·5	0	17 7	Lord Sheffield (Seybert, 554) says £1,900,000 coin.
1775—1781	—	—	—	—	—	—	—	—	Era of "Continental Money."
1790	3·2	·4	·2	·6	3·8	3·9	0	19 6	Reputation of Continental issues.
1791	3·2	—	—	1·8	5·0	4·0	1	5 0	First Bank United States.
1792	3·4	1·0	·4	1·4	4·8	4·1	1	3 5	
1793	4·0	—	—	2·2	6·2	4·3	1	8 10	
1794	4·3	—	—	2·3	6·6	4·5	1	9 8	
1795	3·8	—	—	2·2	6·0	4·6	1	6 0	[of gold. Suspension Bank England; flux
1796	3·3	—	—	2·1	5·4	4·8	1	2 5	
1797	3·2	—	—	2·0	5·2	4·9	1	1 2	
1798	2·8	—	—	1·8	4·6	5·0	0	18 5	
1799	3·4	—	—	2·0	5·4	5·2	1	0 10	Expiration of charter of first Bank United States.

about ten millions) was estimated by Krug at £8,400,000. Seaman's "Progress of Nations," p. 248, New York, 1852.

Year.	Coin.	United States and National Bank Notes.	State Bank Notes.	Total Paper.	Total Currency.	Population.	Currency, per Capita.	Remarks.
							£ s. d.	
1800	3·5	—	—	2·1	5·6	5·3	1 1 2	
1801	3·4	—	—	2·2	5·6	5·5	1 0 5	
1802	3·3	—	—	2·0	5·3	5·7	0 18 10	
1803	3·2	—	—	2·2	5·4	5·9	0 18 5	
1804	3·5	—	—	2·8	6·3	6·1	1 1 2	
1805	3·6	—	—	3·0	6·6	6·3	1 0 10	
1806	3·7	—	—	3·4	7·1	6·5	1 2 0	
1807	4·0	—	—	3·6	7·6	6·7	1 2 10	Embargo December 22; first steamboat.
1808	4·0	—	—	4·55	8·55	6·9	1 4 9	
1809	4·0	—	—	4·8	8·8	7·0	1 4 5	Specie drain; Mexican revolution; stoppage of mines; suspension of New England Drain of specie. (banks.)
1810	3·8	—	—	5·2	9·0	7·1	1 4 5	Apprehension of war (Drain of specie).
1811	3·6	—	—	5·6	9·2	7·3	1 4 5	War declared with England.
1812	3·4	—	—	7·0	10·4	7·6	1 7 2	War continued; "Wild cat" bank note mania.
1813	3·4	—	—	10·4	13·8	7·8	1 15 2	August and September, all except New England banks suspended until January, 1817.
1814	3·4	—	—	10·3	13·7	8·0	1 14 3	Gold 114 to 120.
1815	4·0	—	—	9·1	13·1	8·2	1 12 0	February, peace. Gold 115 down to 102.
1816	4·9	—	—	10·0	14·9	8·4	1 15 2	Gold 116 to 117, 107; second Bank U.S.; England adopts the gold standard.
1817	4·4	—	—	11·0	15·4	8·6	1 15 7	Partial resumption of Bank United States.
1818	4·0	—	—	12·0	16·0	8·8	1 16 0	Height of "Wild cat" bank note mania; gold drain.
1819	4·0	—	—	12·5	16·5	9·1	1 16 10	Revolusion.
1820	5·3	—	—	11·8	16·9	9·4	1 16 0	Resumption of Bank of England; ¹ continued efflux of gold from United States.
1821	4·6	—	—	13·0	17·6	9·7	1 16 5	Spring stricture. (Tucker, p. 208, says 3·6 to 4 coin.)
1822	3·6	—	—	14·0	17·6	10·0	1 15 2	
1823	3·4	—	—	15·2	18·6	10·3	1 16 0	
1824	3·6	—	—	15·6	19·2	10·6	1 16 5	Redundancy of specie in London. Mining Bubbles.
1825	3·8	—	—	16·2	20·0	10·9	1 16 10	Temporary bank panic.
1826	4·0	—	—	16·0	20·0	11·1	1 16 0	Winter stricture.
1827	4·5	—	—	15·0	19·5	11·5	1 14 0	First railway in U. S.
1828	5·4	—	—	13·6	19·0	11·9	1 12 0	Temporary bank panics; President Jackson declares against rechartering United States Bank.
1829	6·2	2·5	10·0	12·5	18·7	12·4	1 10 0	Report of Cong. Com. favouring Bank. [Bank.]
1830	6·4	—	—	12·2	18·6	12·8	1 8 10	Bill introduced to recharter
1831	7·0	—	—	13·2	20·2	13·2	1 10 7	

¹ In these years the coin was all of silver; no gold. (Report of Mr. White, Ho. Rep. 21st Cong., 2nd sess., No. 95.) In the year 1830, coin in bank £3,000,000, silver in circulation £1,600,000, bank-notes £15,400,000; total £20,000,000. (Senate Rep. 21st Cong. 2nd. sess., Dec. 5, 1830, by Mr. Sanford, from Select Com. on Currency.)

² Announced. For note circulation see MacCulloch's "Com. Diet."

Year.	Coin.	United States and National Bank Notes	State Bank Notes.	Total Paper.	Total Currency.	Population. ¹	Currency, per Capita.	Remarks.
						£ s. d.		
1832	7·8	—	—	14·2	22·0	13·6 1 12 5		
1833	8·54	—	—	15·4	23·94	14·0 1 14 0		Removal of deposits from Bank.
1834	12·0	—	—	18·0	30·0	14·4 2 1 7		Veto of Bank bill.
1835	16·0	—	—	20·6	36·6	14·8 2 9 7		Great fire in New York; loss, £4,000,000.
1836	13·0	—	—	28·0	41·0	15·3 2 13 2		Expiration of charter second Bank United States.
1837	14·6	—	—	29·8	44·4	15·8 2 16 0		Suspension, May 10.
1838	17·4	—	—	23·2	40·6	16·2 2 10 0		Universal insolvency; bankers' repudiation of Morris canal-stock; general contraction; fall in prices; stay laws; bankruptcy laws; liquidation; riots.
1839	17·4	—	—	27·0	44·4	16·7 2 13 7		
1840	16·6	—	—	21·4	38·0	17·0 2 4 10		
1841	16·0	—	—	21·4	37·4	17·5 2 2 10		
1842	12·0	—	—	16·74	28·74	18·0 1 12 0		Repudiation of the States.
1843	14·0	—	—	11·7	25·7	18·6 1 7 7		Lowest depression; resumption.
1844	20·0	—	—	15·0	35·0	19·2 1 16 5		Increase of currency.
1845	19·2	—	—	18·0	37·2	19·8 1 17 7		
1846	19·4	—	—	21·1	40·5	20·4 1 19 8		
1847	24·0	—	—	21·1	45·1	21·0 2 3 0		
1848	22·4	—	—	25·7	48·1	21·6 2 4 5		California mines opened.
1849	24·0	—	—	22·94	46·94	22·4 2 2 0		
1850	30·8	—	—	26·2	57·0	23·2 2 8 10		Australian mines opened.
1851	37·2	—	—	31·0	68·2	24·0 2 16 10		
1852	40·8	—	—	31·2	72·0	24·8 2 18 0		
1853	47·2	—	—	28·8	76·0	25·6 2 19 2		
1854	48·0	—	—	35·72	83·72	26·4 3 3 2		
1855	51·52	—	—	37·4	88·92	27·1 3 5 7		
1856	50·04	—	—	39·2	89·24	27·7 3 4 5		
1857	51·86	—	—	43·0	94·86	28·4 3 6 10		Temporary panic; suspension. Resumption.
1858	50·32	—	—	31·0	81·32	29·1 2 16 0		
1859	53·16	—	—	39·0	92·16	29·7 3 2 0		
1860	51·4	—	—	40·0	91·4	31·5 2 18 0		
1861	48·28	—	—	40·4	88·68	32·3 2 14 10		Civil war; U.S. Treasury demand notes issued.
1862	59·7	—	—	36·8	96·5	22·9 4 4 0		Suspension; greenbacks issued.
1863	20·0	82·2	32·2	114·4	134·4	24·5 5 9 7		Circulation of State banks supplanted by National banks.
1864	18·0	102·6	28·0	130·6	148·6	26·1 5 14 0		National bank notes; highest paper inflation. Gold 235.
1865	17·0	120·8	13·0	133·8	150·8	30·3 4 15 7		Peace; gradual contraction.
1866	20·0	142·6	7·4	150·0	170·0	236·0 4 14 5		Rehabilitation of the South.
1867	28·0	140·8	nom.	140·8	168·8	237·0 4 11 2		Extinction of State bank circulation.
1868	28·0	139·8	nom.	139·8	167·8	238·0 4 11 2		Contraction continues slowly.
1869	28·0	138·4	nom.	138·4	166·4	239·1 4 4 10		Contraction continues slowly.

¹ From 1862 to 1865 inclusive, the population includes only that within the U.S. army lines.

² According to censuses taken in 1866, 1867, and 1868, by the Bureau of Statistics, through the Internal Revenue organization. The Decennial census of 1870 shows a smaller population than that of 1869, but the discrepancy is attributed to the different means and methods adopted to effect the enumerations. The figures subsequent to 1870 are based upon the census of that year.

³ Estimate based on Bureau census of 1868.

Year.	Coin.		United States and National Bank Notes.	State Bank Notes.	Total Paper.	Total Currency.	Population.	Currency, per Capita.	Remarks.
								£ s. d.	
1870	30·56	140·8	nom.	140·8	171·36	38·6	4	8 10	
1871	27·34	144·74	nom.	144·74	172·8	39·6	4	6 10	Great Chicago fire; loss, £30,000,000.
1872	25·62	148·28	nom.	148·28	173·9	40·6	4	5 7	Great Boston fire; loss, £16,000,000.
Jan. 1873	26·0	150·4	nom.	150·4	176·4	41·7	4	4 5	Silver demonetized; Black Friday panic; £4,000,000 State bank clearing-house certificates and £2,000,000 Treasury reserves issued as currency; gold imported.
Oct. 1873	28·0	152·4	4·0	156·4	184·4	41·7	4	8 5	
1874	28·0	152·22	nom.	152·22	180·22	42·9	4	4 0	Contraction continued.
1875	28·4	147·26	nom.	147·26	175·66	44·1	3	19 7	Do. do.
1876	30·0	140·9	nom.	140·9	170·9	45·3	3	15 7	Do. do.
1877	35·0	134·04	nom.	134·04	169·04	46·6	3	12 5	Do. do.
1878	40·0	132·56	nom.	132·56	172·56	48·0	3	12 0	Do. do.

NOTE.—The estimates of coin in the United States made by the Directors of the Mint in 1876, 1877, and 1878 are greatly exaggerated.

VI. Table showing the Stock of Gold and Silver Coins in SPAIN at various dates. Sums of coin in millions of pounds sterling; of population in millions.

Year.	Gold.	Silver.	Total Coin.	Population.	Coin per cap.	Remarks.
					£ s. d.	
1724	—	—	20·0	7·6	2 12 10	Ustariz; quoted in Humboldt's "New Spain," iii. 429.
1782	—	—	16·0	10·0	1 12 0	Musquiz; in Humboldt, iii. 429.
1814	—	—	16·0	10·7	1 10 0	Storch in Seaman, 248.
1869	26·0	8·0	34·0	16·8	2 0 0	Master of the Spanish Mint, 1876, in "Rep. U.S. Mon. Com.," i. app. 509. It is uncertain if this includes £6,000,000 of subsidiary silver mentioned in same, p. 510. Est. of Surra y Rull, ibid. 475, preposterous.

VII. Table showing the Stock of Gold and Silver Coins in PORTUGAL at various dates. Sums of coin in millions of pounds sterling; of population in millions. Five milreis = £1.

Year.	Gold.	Silver.	Total Coin.	Population.	Coin per cap.	Remarks.
					£ s. d.	
1756	—	—	·84	2·0	0 8 5	L'Abbé Raynal's "Hist. East and West Indies." He says £625,000 to £833,000. Al-

Year.	Gold.	Silver	Total Coin.	Population.	Coin per cap.	Remarks.
1876	9.2	2.0	11.2	4.0	2 16 0	though this was immediately after the great Earthquake of 1755, in which vast treasures were engulfed, the estimate seems very low. "Rep. of Lisbon Ch. of Com." in "Rep. U.S. Mon. Com.," i. app. 475. They estimate 46,000,000 to 50,000,000 milreis in gold and 10,000,000 milreis in silver subsidiary coin.

VIII. Table showing the Stock of Gold and Silver Coins in the AUSTRO-HUNGARIAN EMPIRE at various dates. Sums of coin in millions of pounds sterling; of population in millions.

Year.	Gold.	Silver.	Total Coin.	Population.	Coin per cap.	Remarks.
					£ s. d.	
1807	—	—	5.2	26.0	0 4 0	Hassel in Seaman, 248. He adds for copper £2,600,000.
1830	—	—	10.0	33.0	0 6 0	Jacob, vol. ii. p. 367. He adds paper, 10; total currency, 20.
1875	6.8	9.0	15.8	37.0	0 8 5	"Rep. Parl. Com. on Silver," app. 126. These are the bank reserves of coin and bullion, there being no coin in circulation. Add for paper 650,000,000 florins = nominally £65,000,000; total currency, £80,800,000. Consult Del Mar's Essay on "Monetary System of Austria-Hungary" in "Rep. U.S. Mon. Com.," app. 102.

IX. Table showing the Stock of Gold and Silver Coins in the NETHERLANDS at various dates. Sums of coin in millions of pounds sterling; of population in millions.

Year.	Gold.	Silver.	Total Coin.	Population.	Coin per cap.	Remarks.
					£ s. d.	
1688	2.0	7.0	9.0	5.0	1 16 0	Gregory King in 1688. This estimate embraces HOLLAND and BELGIUM.
1849	14.0	?	?	3.0	5 0 0	Léon Faucher, "Revue des Deux Mondes," Aug. 1852, quoted in Tooke, vi. 80. This estimate embraces HOLLAND only. It

Year.	Gold.	Silver.	Total Coin.	Population.	Coin per cap.	Remarks.
					£ s. d.	
1876	—	—	8·0	3·9	2 1 2	appears excessive. Of silver there was very little. The metals changed places in the circulation after the demonetization of gold, June 23, 1850, and again after the demonetization of silver in 1875. Estimate based on "Rep. Parl. Com. on Silver," No. 2, p. 63. <i>HOLLAND only.</i>

X. Table showing the Stock of Gold and Silver Coins in SWEDEN at various dates. Sums of coin in millions of pounds sterling; of population in millions.

Year.	Gold.	Silver.	Total Coin.	Population.	Coin per cap.	Remarks.
					£ s. d.	
1872	—	—	1·2	4·2	0 5 7	"London Stat. Jour.," vol. xxxvi. It adds £4,800,000 for paper; total £6,000,000. For corroborative details see "Rep. U.S. Bu. Stat.," July, 1873, p. 34.
1876	0·94	0·66	1·6	4·4	0 7 2	Forsell (Swedish Min. of Finance) in "Rep. U.S. Mon. Com.," i. app. 520.

XI. Table showing the Stock of Gold and Silver Coins in VARIOUS COUNTRIES at various dates. Sums of coin in millions of pounds sterling; of population in millions.

Country.	Year.	Gold.	Silver.	Total Coin.	Population.	Coin per cap.	Remarks.
						£ s. d.	
Venice .	1700	—	·2	—	1·0 ¹	0 4 0 ²	"Postlethwayte's Dic.," art. "Banking," says 800,000 oz. silver.
Italy .	1876	4·0	4·0	8·0	27·0	0 6 0	In Oct. 1876, there were in banks and treasuries 92,000,000 francs in silver, and 96,000,000 francs in gold ("Rep. Parl. Com. Silver," No. 2, p. 50). This estimate is based on these figures.

¹ Population conjectural.

² Hypothetical.

Estimate, by Countries, of the Population and Stocks of Gold and Silver Coins and Bar Bullion in the EUROPEAN WORLD at dates nearest to the beginning of the year 1879. Population in millions; sums of coin, &c., in millions of pounds sterling.

Countries.	Year.	Popula- tion.	Coin.	Coin per cap.			Remarks.
				£	s.	d.	
France	1879	37·3	204·0	5	9	4	Estimate by the present writer.
United Kingdom . .	1879	34·2	104·0	3	0	0	Ibid.
German Empire. . .	1879	44·0	80·0	1	16	5	Ibid.
Russia in Europe . .	1876	73·5	50·0	0	13	7	Date 1876, since which time the stock of coin has probably fallen.
United States . . .	1879	49·0	50·0	1	0	0	Treasury est. excessive.
Other Independent States in America	1879	36·0	10·0	0	5	7	Estimate.
Spain	1869	16·8	34·0	2	0	0	Since this date paper has largely superseded coin.
Portugal	1876	4·0	11·2	2	16	0	Lisbon Ch. of Commerce. Amount seems excessive.
Austria-Hungary . .	1875	37·0	15·8	0	8	5	"Parl. Rep. on Silver."
Italy	1876	27·0	8·0	0	6	0	Estimate.
Holland	1876	4·0	12·0	3	0	0	Estimate, £6,000,000 in bank. "Parl. Rep. on Silver," No. 2, p. 63.
Belgium	—	5·5	16·6	3	0	0	Estimate.
Switzerland	—	2·8	2·0	0	14	0	Estimate. Switzerland coins no gold and no silver ecus. "Parl. Rep. on Silver," No. 2, p. 47.
Greece	—	1·5	2·0	1	16	10	"Parl. Rep. on Silver," No. 2, p. 29. Amount seems excessive.
Sweden	1876	4·4	1·6	0	7	2	Forsell.
Norway	1876	1·9	1·6	0	16	10	Estimate. "Parl. Rep. on Silver," No. 2, p. 83.
Denmark	1879	2·0	·6	0	6	0	Estimate.
Turkey in Europe, including Roumania and Servia . .	1879	16·0	5·0	0	6	0	Estimate.
European portion of colonies in America, Africa, and Australia	1879	10·0	10·0	1	0	0	Estimate.
Total ¹		406·9	618·4	1	10	4	

¹ In 1850 the total stock of Gold and Silver coins in *all Europe* was estimated at £340,000,000, and the total emissions of circulating notes at £169,200,000. Together, £509,200,000. "App. Ency.," vii. 340., art. "Europe."

CHAPTER XXVI.

THE RATIO IN ANCIENT TIMES.

The ratio has varied in historical times two hundred degrees—Silver more valuable than gold in ancient Arabia—Ratio in time of Menes—Generally speaking, silver was the more valuable metal until the opening of silver mines of Greece and Spain by the Phœnicians, &c.—To elucidate the significance of ancient data it becomes necessary to ascertain causes that influence the ratio—Cost of production has no bearing upon it—In the present phase of metallurgy silver can be obtained in greater quantities than gold—The vastness of the quantities of silver obtained have partly occasioned its inferior value—The actual cost unascertainable—The quantity of the stock on hand and the law are the two influences that regulate the ratio—Application of these views to history—Difference between the Eastern and Western ratio. The Western widened until fourth century B.C., then narrowed until discovery of America; since which time it has widened, with a tendency to widen still further, derived from the influence of quantity, and of the law—The narrowing from fourth century B.C. to the discovery of America must be due to some exceptional cause—It is found in the influence of the Eastern ratio—This always narrower than the Western—While silver rose from the ratio of 14 to $10\frac{1}{2}$ in the Occident, it fell from $5\frac{1}{2}$ to 6 or 7 in the Orient. Equalization of the Eastern and Western ratios—Subsequent tendency of both ratios to widen—Future tendency of silver to fall in gold value, and of gold to rise in silver value from the influence of mint laws.

IF our view is extended over the entire range of history—both ancient and modern—it will be found that the relation of value, or ratio between gold and silver has varied from 1 silver = 10 gold, to 1 gold = 20 silver. An instance of the first-named ratio belongs to the Orient, and carries us back more than fifteen centuries before our era. The second belongs to the London market during the silver panic of July, 1876.¹

¹ The writer was informed by one of the parties to the transactions, that, shortly after the discovery of gold in California, it was often sold by

In a fragment of the works of Agatharchides—a Greek geographer who lived at the time of Ptolemy VI., Philometer, King of Egypt (B.C. 181—145)—we are informed that at one time the value of silver in ancient Arabia was tenfold that of gold.¹ No date accompanies this statement, but since we are assured by other evidences that so early at least as the eighth century before Christ, gold in the valley of the Tigris was thirteen times the value of silver, we may, without fear, assume that Agatharchides writes of a period long previous to this. If we may trust to the deductions of a German savant, silver was cheaper than gold during the seventeenth century before Christ. But, although this may yet prove to have been the fact, it is deemed hardly safe to infer it from the evidence advanced.²

The superior value of silver must have disappeared when the silver mines of Greece were opened, and the Phœnician traders exchanged their exuberant metallic produce for the freights of the Orient.

This occurrence must be assigned to a very high antiquity, and with the greatest probability to the era of Cadmus, some fifteen centuries before Christ.

Xenophon, who lived 443—355 B.C., says of the antiquity of these mines:—

“No one ever pretended from tradition or the earliest accounts of time, to determine when these mines first began to be wrought, which is a proof of their antiquity.”³ And with reference to their bearing upon the value of silver he says:—

the miners for its weight in silver coins, or at the ratio of about 1:1. This, however, was quite an exceptional circumstance, and local to California.

¹ Jacob, vol. i. p. 97. The superior value of silver to gold in very ancient times is asserted by Boeckh, “Polit. Econ. Athen.,” book i. chap. 6.

² Brandis, on the tribute lists of Thutmosis, sculptured upon the monuments of Thebes (Karnak). The date, however, appears to be inferred from a passage in Herodotus relating to a period eleven centuries later. Consult Brandis as quoted by Raymond, “U.S. Mining Com. Rep.,” 1874, p. 473, and Herodotus, book iii., and Boeckh, p. 12.

³ Xenophon on the Revenues of Athens; Walter Moyle’s translation, D’Avenant’s Works, ed. 1771, vol. i. p. 316.

“The divine bounty has bestowed upon us inexhaustible mines of silver, an advantage which we enjoy above all our neighbouring cities, by sea and land, who never yet could discover one vein of silver ore in all their dominions.”¹

From these evidences there seems to be some warrant for concluding that the superior value of silver to gold, vouched for by Agatharchides, existed at some period previous to the fifteenth century before Christ. It was doubtless confined to the East.

Some explanation of the high value of silver in the Orient, and particularly in Arabia, at this remote period, is found in the following named facts.

1st. In the absence of accounts of any important silver mines, or the knowledge of reducing silver ores in the Orient, coupled with the working of the gold sands of the Indian rivers,² and the placer and quartz mines of ancient Arabia,³ we are justified in inferring that previous to the discovery of the Greek silver mines there had accumulated in the Oriental world—and of this Arabia formed an important part⁴—a considerable mass of gold with comparatively little silver.

Without any reference whatever to cost of production, the presence of a considerable quantity of one metal, and of a very limited quantity of the other, may have rendered the latter the more valuable. This we know to have been somewhat the case in Peru, where, previous to the landing of the Spaniards, gold was less valuable than copper.⁵

The narrowness of the ratio in Japan, *i.e.*, 6 to 7, before the Portuguese opened it to the influence of the Western

¹ Xenophon on the Revenues of Athens; Walter Moyle's translation, D'Avenant's Works, ed. 1771, vol. i. p. 316.

² See chapter i. of the present work.

³ According to Captain Burton's recent work, “The Gold Mines of the Land of Midian,” Arabia, in remote times, was devastated in the search for gold as thoroughly as the Roman provinces were in later ones.

⁴ As to the commercial importance of Arabia in very ancient times, consult Baldwin's “Prehistoric Races,” “The Land of Cush.”

⁵ Helps, “Spanish Conquest,” iii. p. 478.

ratio, and *the relapse* of the ratio from 12 or 14, during the era of Portuguese commerce, to 6 or 7 after the ports of Japan were closed in 1639, affords other confirmation of the correctness of this view.

In the Occidental world gold seems to have been the more valuable metal from the remotest historical period. We are informed that, by the laws of Menes the value of gold was fixed in Egypt at two and a half times that of silver.¹ The era of Menes has been placed at the thirty-seventh to the thirty-ninth century before Christ; and if credit be accorded to these statements and dates,² it would seem that between the eras of Menes and of Cadmus, either very little commercial intercourse existed between Egypt and Arabia, or else that for some reason, perhaps the use of numerary money,³ very little commerce in the precious metals took place between them; or else that the Oriental ratio, not differing materially from the Occidental in the time of Menes, had gradually accorded a higher value to silver, until this movement was reversed again through the influence of the Greek mines.

It is, however, very much more easy to believe that the ratio quoted from the code of Menes belongs to a later date than Menes himself. Like other great codes of law, this one was doubtless greatly modified in time; and, though always passing by the name of Menes, contained provisions that were incorporated into it centuries subsequent to the epoch of its author. This is the case with the Roman codes, and many others.

In turning from these remote eras and insecure hypotheses to the more satisfactory accounts of the classical historians, it becomes desirable to ascertain beforehand, so far as we may, what are the principal influences that

¹ Léon Faucher in Wilkinson's "Ancient Egyptians," chapter viii.

² Consult as to the era of Menes, chap. i. of present work. The laws known by his name may, however, have been altered long afterwards.

³ Consult as to Egyptian numeraries chap. i.

govern the relation of value between the precious metals. By this means it is hoped that a more satisfactory connection may be traced between the scattered fragments of antiquity.¹

The common view of this matter is that the ratio is governed by the relative cost of the production of these metals; but after what is elsewhere advanced in this work concerning the fallacy of this view, so far as it relates to the value of each metal compared with other commodities, it need scarcely be repeated that it is equally fallacious in its application to the value of one metal compared with the other. The suddenness and rapidity of many of the changes of ratio—for example, those which followed the conquests of Alexander the Great, Julius Cæsar, Cortes, and Pizarro,² and even the late change from the long time ratio of $15\frac{1}{2}$ to the present one of 18—also prove that it cannot be due to cost of production; for these changes, and many others, took place without any corresponding changes in the conditions of production.

Referring to the conclusions elsewhere reached with respect to the influences which control the value of the precious metals, it is only necessary to say in this place that quantity is the primal element that determines the value of money, whether it consists of the precious metals or any other substances, or these combined with other substances; and as to the value of one metal in the other, it depends on quantity as effected by legal regulations.

I. Quantity is related to the stock of each metal on hand in the world, monetized, or physically and legally susceptible of being monetized, plus all numeraries, tokens, bank notes, or other money, whether of paper or other substances. Quantity also involves consideration of the current and prospective supplies of metal or other moneys, either from conquest, mining, or legal monetization, and the proportion of

¹ See Buckle's "Essay on Liberty," as to the higher value conferred upon facts by the discovery of their relations.

² See table of the ratio appended to this chapter.

such supplies to the combined stock of monetized metals, and other substances or tokens used as money.

Taking this to be the meaning of quantity as related to money, it may be accepted as an entirely safe doctrine that it is this, and this alone, which primarily regulates its value. When this quantity is subordinate to the will of man, and that will subject without restraint to individual self-interest, then, indeed, is the value of the thing thus produced due to cost of production; but not otherwise. For example, the quantity of cotton cloths which may be produced this year throughout the world is subordinate to the will of man. The exercise of this will is subject, without practical restraint, to the influence of individual self-interest. Any man who has the means may produce as many cotton cloths as he pleases; nor, as things stand, can the combined will of society stop him. There is no interdict upon the production of cotton cloths. Cotton cloth may, therefore, be produced in practically illimitable quantities, or its production may be abandoned altogether. Cost of production alone determines what quantity of it shall be produced.

But this is not the case with the precious metals. Their production cannot be indefinitely increased; mines cannot always be found; nor, when found, worked; nor, when worked, made to yield metal. The vast quantity of the precious metals accumulated and on hand in the world cannot be disposed of; and this quantity is so vast compared with the utmost current production, that a long period must elapse before the latter could sensibly affect the value of the former.

Nor are the precious metals alone in these respects. Improved land stands in the same category of commodities which are not amenable to the law of cost of production. Its quantity cannot be increased indefinitely; and the vast areas already in the possession of man must necessarily have a powerful conservative influence upon its price. Therefore, although the cost of taming wild lands were to fall to-day to a mere fraction of its previous cost, the fact would have no appreciable influence upon the value of land. Indeed, it may

be said, broadly, that no commodity whose production is not amenable to the influences of individual interest derives its value from the cost of production.

For example, though to artificially produce water—a commodity for which there is no substitute, and with the acquisition of which society does not interfere—by the chemical union of hydrogen and oxygen, might make it worth a thousand dollars per cubic inch; yet, so long as the earth is as full of it as it is to-day, that liquid will remain not without the highest worth, but without the slightest value. Were it conceivable that the springs and rivers were dried, and man were compelled to resort to the laboratory for his supplies of water, then, and not until then, would the cost of its production determine its value.

And so, in a similar way, it may be said, that when there are no substitutes for gold and silver, when their production is entirely amenable to the will of man, not only socially, but individually, and every man may produce as much or little of them as he chooses, then, and not till then, will their value be determined by the cost of their production.

II. Legal regulations, first, concerning the ratio itself, and second, concerning money at all, are, next to quantity, the most potent of all the influences that determine the ratio of value between the precious metals. So potent are they that, under certain circumstances—as those of universal specie money and tolerably equal quantitative stocks and supplies, the regulation of a single important nation, or of several nations combined, might be sufficient to render the market ratio of the world whatever may be desired—for example, 1 gold = 1 silver—and to keep it there for ever, entirely irrespective of cost or of quantity.

With regard to the influence of legal regulations upon the relative value of gold and silver, it is to be observed that it is exerted in three ways—firstly, through the effect of such legal regulations upon quantity; secondly, through discriminating taxes or mint charges upon the metals, after they shall have been extracted from the earth, or obtained

from conquered nations (no matter what the cost of original production), and introduced into the markets at their current value; thirdly, by the mere force of law, irrespective of quantity or of discriminating charges. These operations of law will be treated in their turn.

A. The effect of law upon quantity, and of quantity upon ratio.

The monetization or demonetization of either metal, or a change of standard, as it is called, will diminish the supply compared with the demand of the monetized metal. Such an act will enhance the demand, without increasing the supply, and thus render the monetized metal dearer, and contrariwise the demonetized metal cheaper. The most recent notable instance of this kind is that afforded by the German Imperial mint laws of 1871.

The limitation or extension of coinage facilities will produce similar results—as witness the effects of the recent closing of the French mints to the coinage of ecus.¹

Like results will follow the suspension or resumption of specie payments by any important country, or the substitution of numeraries, tokens, or bank notes for specie, or of specie for numeraries, tokens, or bank notes. Such legal regulations will cause the supply of the precious metals to change its proportion to the demand for them, and will thus alter their value relative to other commodities. Several instances of this sort have occurred within late years, as when the United States suspended specie payments in 1862, Italy in 1866, and France in 1870.²

B. Effect of mint charges upon ratio.

The imposition of discriminating mint charges has an important influence upon the ratio. If the latter stood at 1 gold = 1 silver, and the same rate were levied upon one metal as the other, it would make no difference how mint charges were imposed, whether by weight or value. But when the ratio is unequal, an *ad valorem* mint charge, al-

¹ "Report U.S. Silver Com."

² Ibid. pp. 21, 22.

though apparently similar for both, becomes in reality a discriminating charge in favour of one metal, and against the other. Thus, suppose the ratio to be, as it was in the days of Herodotus, 1 : 13, a mint charge of, say five, or any other per cent. *ad valorem* upon both metals would amount to thirteen times as much in weight upon silver as gold. The charge upon gold would be .05 of gold, and upon silver .65 of silver, which is thirteen times as much.

If, instead of this, the mint charge were five per cent. of the weight of the metal coined, it would be equally the same for both. Thus it would amount to .05 pound of gold upon each pound of gold, and .05 pound of silver upon each pound of silver. Hence it makes an important difference whether mint charges are imposed *ad valorem*, or by weight. The tendency of *ad valorem* charges is to widen the ratio ; that of weight charges, as far as the ratio is concerned, is *nil*.

Whenever debts have to be paid abroad, commercial competition obliges the shipper of metal to select the one upon which the lighter mint charges are levied, in order that, upon being recoinced in the country of its destination (history knows nothing of universal coinage or uniform coinage), it should yield him the greater net result in coined metal. One of the metals would thus become more desirable than the other. Since the opening of the Greek and Spanish silver mines, this metal has been gold ; and the tendency of discriminating mint charges has been to continually widen the ratio. Every time the metals passed from one country to another—that is to say, every time they had to be recoinced—more mint charges had to be paid upon silver than gold (for the charge, so far as we know, has always been *ad valorem*), and but for the almost entire failure, at certain times, of the supplies of both metals, and their relatively limited stock at all times, it is believed that this influence alone would have so greatly widened the ratio as to have rendered silver, ere this, almost worthless for the purposes of specie or “intrinsic” money. Previous to the era of the silver mines alluded to, the tendency of the mint charges was

doubtless the other way, namely, to render gold less and less valuable.

At the present time, the substitution of Government and bank notes for coins in the various mixed currencies of the world deprives silver of the protection which the limitation of new supplies has afforded to its value, against the encroachments of the mint charge; and the ratio, which now stands at 1:18, must be expected to widen to 1:20, and further. Nothing seems likely to avert this result, short of one of two measures. Either the mint charges of all the principal countries employing the precious metals for money must be levied upon weight instead of value, or else a number of powerful nations must combine together to sustain the value of silver by arbitrary decree.

C. Arbitrary decree.

Theoretically, arbitrary decree can make the ratio whatever may be desired, irrespective of either quantity or mint charges; practically, arbitrary decree is unattainable. To render such decree effective, it must be that of several important nations combined. It is easy enough for nations to resolve; but what motive beyond their own interest is there to induce them to execute? None but their own sense of right; and among nations—but few of which have as yet clearly passed beyond the feudal stage, and thrown off the influences of Church and caste—this can hardly be relied upon too implicitly.

Supposing, however, that such co-operation were attainable, and, for example, the combined nations of Europe and America decreed, and remained steadfast to the decree, that the ratio of gold and silver should thenceforth be as 1:1, it is difficult to conceive how this ratio could ever be changed, either by the operation of quantity, mint charges, or any other influence.

Relative demand of the precious metals for the arts could not change it, for even supposing everybody preferred gold plate to silver—a preference which under such circumstances cannot be admitted—this would not change the ratio. As

no atom of gold could become money again, except at a par with silver, it is impossible to imagine that any scarcity of the one metal, or plentifulness of the other, could impair their equal value. It would not matter if, other things aside, gold were preferable to silver for use in the arts, or not. The law of nations, making them, when coined, equal as money, and all contracts dischargeable, all debts payable in the same weight of one as the other; and the conversion of both, from coin to bullion, and from bullion to coin, being unlimited, and subject to the same terms of seignorage, it necessarily follows that their value would be the same.

Nor could the vicissitudes of production effect a change in the ratio. Though but a pound of gold a year were produced against millions of pounds of silver, still would the ratio remain unchanged. Nobody would pay more than a pound of silver for a pound of gold, when the former could discharge the same amount of indebtedness, past, present, and future.

Nor would the demands of commerce change it. If debts were due from one country to another, the shipment of one metal would answer all the purposes which could be subserved by a shipment of the other, seeing that both metals, when coined, would be equally legal tender in all countries, and that coinage everywhere would be unlimited, and subject to the same charges for both metals. Nor would the condition of the stock on hand alter the ratio. Although this stock consisted nearly entirely of silver, and very little of gold, still would a pound of silver always buy a pound of gold, so long as the universal law rendered the one equally as effective as the other in the payment of debts. The market and the legal price would always be the same.¹

¹ On a previous occasion the writer reached the same conclusion from even a narrower basis, *i.e.* upon the assumption of a fixed ratio, and unlimited coinage, by a single important commercial country, instead of, as herein, from the point of view afforded by the supposition of a common law on the subject between all nations. He said:—

“A legal ratio between the precious metals adopted in an important

Some familiar examples of the operations of law upon the value of the precious metals may seem desirable in this place. Until the passage of the recent law of the United States, remonetizing the silver dollar, that coin, always weighing the same, viz., $371\frac{1}{4}$ grains pure, was sold to the exchange brokers of San Francisco for about 90 cents in gold—*i.e.*, nine-tenths of 23·22 grains of pure gold.

Upon the enactment of the law the silver dollar rose to par. The law simply enlarged the legal tender function of the coin from \$5 to an unlimited amount. At the present time, while this dollar is at par in gold, the metal it contains can be purchased in the market for 90 cents or less. Again, the trade dollar, which contains 378 grains pure, is not worth as much in the market as the silver dollar of $371\frac{1}{4}$ grains; because the law makes the latter an unlimited legal tender, and the former not. Finally, two half-dollars—weighing, if coined between 1853 and 1873, only 345·6 grains, and if coined since 1873, only 347·22 grains—are worth in the market more than a trade dollar of 378 grains, the former being legal tender for \$10, and the latter not.¹

The operation of law shown by these examples is of a purely local character, and is probably not susceptible of further extension, without incurring the risk of being defeated by counterfeiting. Indeed, it is believed to be already beyond this limit.²

It is useless to discuss the probability of the adoption by international convention of any general and radical reform, country, if coupled with full legal tender, and unrestricted coinage, at brassage, or a moderate seignorage, constitutes in effect, a standing offer to purchase all the current supplies of one metal at a fixed price in the other. . . . It follows that the free mint prices, when the mints are competent to deal with the supplies, make the market ratio." "U.S. Silver Report," Appendix, 66.

¹ Section 3,586 of the revised statutes, which for a time made the trade dollar legal tender for \$5, has been repealed.

² The writer publicly expressed this view, upon the day after the passage of the silver bill; and in less than a week afterwards counterfeit dollars, which could not be distinguished from the genuine, were found to be in circulation.

concerning the legal ratio between the metals. Such an event seems too remote; and, before it happens, it is probable that attempts will be made to solve the monetary problem, through the adoption of purely numerary systems.

Reviewing what has been adduced concerning the influences which practically determine the ratio of value between gold and silver, it may be said, briefly, that among these influences, cost of production finds no place at all; that the principal ones are the stocks of the precious metals, and the laws concerning money; and that among the latter is one (the discriminating mint charge against the cheaper metal) which has always had the tendency to render the dear metal dearer and the cheap metal cheaper.

Resuming our history, which may now be read by the light afforded by these conclusions, it is to be observed that a considerable portion of Western Asia, which in the earliest times belonged, by political relations and commercial intercourse, to the Oriental world, had afterwards, through the influence of Phœnician commerce, become attached to the Occidental. Thus, while, at the period alluded to by Agatharchides, Arabia belonged to the Eastern world; at the date next to be mentioned, it was fully within the Western, which now also embraced the empires of Assyria and Persia. The earliest instance of the western ratio is derived from the cuneiform inscription at Nineveh (Khorsabad) on the Tigris, and is attributed to the year B.C. 708. This ratio is 1 gold = 13·33 silver. A more satisfactory instance is found in Herodotus, and relates to Persia, about the year B.C. 500. This ratio is derived from the payment of the Egyptian tribute to Darius, and is given at 1 gold = 13 silver.¹

From this period to the fourth century B.C. silver fell in value, and the western ratio widened, until it stood in Greece at 1 gold = 14 to 15 silver; and this was probably also something near the ratio in all Levantine Europe and Asia Minor. From the fourth century B.C. to the discovery

¹ Herod., iii. 95. Boeckh, book i. chap. iv.

of America, gold fell in value, and the western ratio gradually narrowed until, in A.D. 1492, it stood at about 11 throughout Europe.

The ratio in England was fixed by the Act of 22 Edw. IV. (1483), at 11·158;¹ North Germany, by the Lubeck mint rule of 1463, at 11·60;² France, by the law of 1388, at 10·75;³ Spain, by the law of 1483, at 11·675; in Italy it stood at about 10½;⁴ in South Germany, Russia, and the Levant, the ratio cannot be determined from the authorities at command. Spain and France were at that time among the most important commercial countries in Europe; and the legal ratios adopted by those countries went farthest to determine the general market rate throughout Europe.

With a tendency of the western ratio, both from the continual accumulation of the stock of silver, and the influence of *ad valorem* mint charges, to always widen—in other words, with a tendency of silver always to fall in value, as compared with gold—the narrowing of the western ratio, or rise of silver, from the time of Alexander the Great to that of Columbus, must have been due to some exceptional cause, having no connection with the principles already adduced. This cause will be found in the influence of the eastern ratio.

Next in antiquity to the instance related by Agatharchides is probably that one mentioned by Strabo, who states, in his 16th book, that in a country bordering on that of the Sabæans, gold has the two-fold value of silver, and three-fold that of bronze.⁵ No date is connected with this circumstance, but it may fairly be inferred to have related to a period long previous to the era of the great geographer.⁶ In the fifth century B.C., as we are assured by another authority, gold in the East stood as 1 to 5 or 6 of silver.⁷

¹ Tooke, vi. 417.

² Soetbeer.

³ Humboldt's "New Spain," iii. 400, and Balch in "Penn Monthly," Philadelphia, March, 1877, p. 198.

⁴ Soetbeer.

⁵ Boeckh, book i. chap. vi. *note*.

⁶ Strabo wrote during the first century before Christ.

⁷ "App. Cyc.," xiv. 658. Consult Léon Faucher.

From the fifth century B.C. to the seventeenth century of our era, no satisfactory accounts have been met with of the ratio in the Orient, but the direction of the flow of silver furnishes an assurance that the ratio must always have been narrower than in the Occident. Said Sir Isaac Newton in 1717, "In China and Japan one pound weight of fine gold is worth but nine or ten pounds weight of fine silver, and in the East Indies it may be worth twelve."

The closer intercourse with the Orient which followed the Portuguese and Dutch maritime discoveries of the sixteenth century, doubtless contributed to widen the eastern ratio from its position at the period of the discovery of America; and at this period it may be conjectured to have stood generally at about 1:6 in Japan to 1:7 in China and India, though probably the difference in localities was very great.

It may be noticed here, in parenthesis, that the ratio both in Japan and China has undergone great perturbations. In Japan it probably stood at 1:6 to 1:7 at the period when intercourse was opened by the Portuguese. A century later it stood, according to Newton, at 1:9 or 1:10. In 1860, shortly after the second opening of commerce with Europe, it stood 1:6 (Griffis, "*Mikado's Empire*," p. 602). According to Alcock, ii. 348, and Williams's "*Commercial Guide*," which follows Alcock in this particular, the ratio in 1854 was 1:4; and this conclusion, which is said to have been derived from "the face value of their gold and silver coins," has been repeated in many works of reference. But no confirmation has been found of it, and it conflicts with the special report on the subject by the pursers of Perry's expedition.

In China the ratio in A.D. 1285 was 1:10. In 1375 it is said to have been 1:4, but this statement lacks confirmation, and is improbable. Lecompte, a Jesuit, who wrote in 1690 (London, 1697) gave the ratio in China at 1:10, whereas, says he, "among us (in Europe), it is as 1:15." Newton (in 1717) gave it at 1:9 to 1:10. Turgot, in 1776, gave it at 1:12.¹

¹ Turgot, "*Wealth of Nations*," ed. London, 1793, p. 49.

In 1779 the ratio at Peking is said to have been 1:17½; but this, if true—for it lacks confirmation—was probably merely temporary and local.

In 1810 it was 1:10 at Canton. In 1821 it was 1:18 in Peking; in 1844, 1:17 at Canton; and in 1845, 1:16 at Canton; these three ratios, lacking authority, and, if true, probably merely local or temporary. From 1849 to 1860 the ratios at Shanghai compared with the annual average rates at London are given herewith from Rondot's article on Chinese weights and moneys in the "Dictionary of Commerce and Navigation," published by Guillaumin at Paris, in 1861, quoted by United States Minister George F. Seward, from whose valuable communication to the Monetary Commission¹ many of the above ratios in mediæval and modern China are also obtained.

*Ratio of Gold and Silver at Shanghai and London
respectively.*

Year.	Shanghai.	London. ²	Year.	Shanghai.	London.
1849	1:15·5	1:15·83	1855	1:12·8	1:15·36
1850	1:14·1	1:15·83	1856	1:13·4	1:15·33
1851	1:14·4	1:15·46	1857	1:14·2	1:15·27
1852	1:14·4	1:15·57	1858	1:14·7	1:15·36
1853	1:16·5	1:15·33	1859	1:14·9	1:15·21
1854	1:14·0	1:15·33	1860	1:15·9	1:15·30

Returning now to the consideration of the general subject of the ratio in ancient times, it is to be observed that while during the twenty centuries previous to the discovery of America the western ratio was narrowing from about 1:14 to 1:11, it widened in the east from about 1:5½ to 1:6 or 1:7.

¹ Report, i. App. 541-570.

² These ratios (at London) differ slightly from those given in the next chapter of this work; but not enough to warrant further attention.

Apart from any other consideration it seems probable that as commerce progressed, and intercourse between Europe and Asia grew more intimate, each ratio was modified by the other, until they both came to the same level, which they did in the early part of the present century.¹

The influence exercised by the eastern upon the western ratio was, however, not merely to attract the latter from a stationary condition towards the former, but to modify a tendency of the western ratio to widen from 1:14 to a lower value of silver, and confine it to 1:11. In other words there existed a tendency of the western ratio to *continually widen*. This tendency had widened it from 1:13½ in 708 B.C. to 1:14 or 15 in the fourth century B.C. It was at this period that active intercourse and commerce was opened between Europe and further Asia. The Persian expeditions into Europe occurred during the fifth century B.C. The expedition of Alexander into India during the fourth century; afterwards the Greeks, Carthaginians, and Romans maintained regular commercial intercourse with the Orient. One of the results of this intercourse was that the tendency of the western ratio to widen was counteracted by the eastern ratio, and thenceforth the former, instead of continuing to widen, slowly narrowed.

That the western ratio had by itself a tendency to widen, will hardly be disputed, when it is remembered that during the period under review, viz., from the fourth century B.C. to the discovery of America, the principal one of the two precious metals produced in the Western World was silver, and that the stock, though it declined after the exhaustion of the Spanish mines by the Romans, became more and more argentiferous, and less and less auriferous. During this period the Greek silver mines of Laurion, the Spanish silver mines, and the German and Hungarian silver mines, exhibited their highest productiveness; while the little gold acquired by Europe was derived from a remote commerce with the East. Aside from all other reasons—for there was

¹ Except in Japan, which had been almost closed to Western commerce since 1639.

another—here was an insurmountable one for silver to fall in value, compared with gold ; and that it did not fall, but on the contrary rose, is solely attributable to the influence of the Oriental trade. The moment that the supplies of the precious metals to Europe from America become so ample that, instead of seeking for gold in the Orient, the former could afford to export silver to Asia, the modifying influence of the eastern ratio was destroyed ; and the tendency of the western ratio to widen was left without restraint.

This widening has gone on until from 1:11 at the period of the discovery, the rate has now reached 1:18. So long as silver continued to be the principal metal supplied to Europe this movement is easily accounted for. It is attributable to the continual increase of the stock of silver in Europe, and the continual relative diminution of the stock of gold. But when Brazil, and afterwards Japan, Russia, California, and Australia were opened, these conditions were reversed. It was now gold that became more plentiful, and silver relatively scarcer.

Why, then, did silver still continue to fall in value ? This question has already been answered. The constant tendency of silver to fall in value is found in the laws of money : in the long-time custom of levying mint charges by value. This alone has furnished a constant pressure, which has been upon silver, and promoted its decadence ever since man first learnt to extract it from its ores, and which, without radical reform in the mint laws of leading nations, must ultimately unfit that metal for money.

APPENDIX TO CHAPTER XXVI.

TABLES OF THE RATIO IN ANCIENT TIMES.

I. *Table showing the Ratio of value between gold and silver in the EASTERN and WESTERN Worlds, respectively, from the most remote times to the 5th Century B.C.*

EASTERN RATIO.			WESTERN RATIO.		
Date.	Ratio.	Remarks.	Date.	Ratio.	Remarks.
Uncertain	1 S : 10 G	Arabia, Agatharchides.	Uncertain	1 G : 2½ S	Egypt. Laws of Menes.
Uncertain	1 G : 2 S	The East, Strabo.	—	—	—
			B.C. 708	1 G : 13½ S	Assyria. Cuneiform inscriptions at Nineveh.
			B.C. 500	1 G : 13 S	Persia. Herod. III. 95.
			B.C. 490	1 G : 12½ S	Sicily. Time of Gelon. Boeckh, 44.
			B.C. 420	1 G : 13½ S	Asia Minor. Xen. Anabasis.
5th Cent. B.C.	1 G : 5 or 6 S	App. Cyc. xiv. 658.	B.C. 400	1 G : 12 S	Greece. Hipparchus. Plato.
			B.C. 400	1 G : 12 S	Various authorities quoted by Boeckh.
			B.C. 400	1 G : 13½ S	
			B.C. 400	1 G : 15 S	

II. *Table showing the WESTERN Ratio from the 5th Century B.C. to the Discovery of America.*

Date.	Ratio of Gold to Silver, as 1 to —	Remarks.
B.C. { 404-336	12:00 13:00 13:33	Values in Greece from the Peloponnesian war to the time of Alexander; according to allusions in various Greek writers.
340	14:00	
338-326	11:50	
343-323	12:50	Egypt under the Ptolemies.
300	10:00	Greece. Fall of gold, caused by influx of Alexander's spoil.
207	13:70	Rome. Boeckh, book i. chap. vi. Overvalued gold <i>scruples</i> , coined at the rate of 1 gold to 17.143 silver.

Date.	Ratio of Gold to Silver, as 1 to —	Remarks.
B. C.		
189	10·00	Rome. Ratio in tax payments. Polybius, xxii. 15, § 8. Livy, xxxvii. 11.
186	10·00	Rome. The long-time ratio (of 13 and over) diminished one-third in two months by extraordinary supplies of gold from Aquileia. Strabo, iv. vi. 12. Polyb. xxiv. 10. Sueton., "Cæsar," 54. [from Gaul.]
58-49	8·93	Rome. Fall of gold occasioned by influx of Cæsar's spoil
54	11·91	Rome. Coinage ratio. Boeckh, book i. chap. vi.
A. D.		
1-37	10·97	Rome. Reigns of Augustus and Tiberius.
37-41	12·17	Rome. Reign of Caligula.
54-68	11·80	Rome. Reign of Nero.
69-79	11·54	Rome. Reign of Vespasian.
81-96	11·30	Rome. Reign of Domitian.
138-161	11·98	Rome. Reign of Antoninus.
312	14·40	Byzantium. Reign of Constantine.
438	14·40	Rome and Byzantium. Theodosian Code. (Boeckh, book i. chap. vi. alludes to some coinage in A. D. 422, at the ratio of 1 : 18.)
864	12·00	Probable ratio under the Carolingian dynasty as shown by the Edictum Pistense.
1260	12·60	Average ratio in the Commercial Cities of Italy.
1344	12·09	
1349	11·57	
1356	11·16	
1401	11·16	
1421	10·33	} England. Mint Indentures. Tooke, vi. 417.
1464	10·33	
1465	11·16	
1470	11·16	
1482	11·16	
1351	12·30	
1375	12·40	
1403	12·80	
1411	12·00	} North Germany. Rules of Lubeck Mint.
1451	11·70	
1463	11·60	
1455 { to {	10·50	} According to the accounts of the Teutonic order of Knights.
1494 {		
1336	10·50	Holland. Humboldt's "New Spain," iii. 400.
1388	10·75	France. Ibid.
1492	10·50	France. Minister Gaudin, as quoted by Mr. Thos. Balch in "Penn Monthly," for March, 1877, p. 198.
1475	10·97 $\frac{1}{2}$	} Spain. "Memorias de la Real Academia de Historia," tome vi. Madrid, 1821.
1480	11·55 $\frac{1}{2}$	
1483	11·67 $\frac{1}{2}$	
1497	10·75 $\frac{1}{2}$	
1492	11·00	Year of the discovery of America. Average of the Mint ratios of England, France, Germany, Lubeck, and Spain.

CHAPTER XXVII.

THE RATIO IN MODERN TIMES.

Review of preceding chapter—The Edict of Medina—Erroneous view of its influence—Mint ratios in Spain for three centuries—Influence upon silver of discriminating mint charges—Shipments, freights, and recoinages of metal—Paper money and legal alterations of the metallic standard—Change of standard to gold in Portugal and England—This has benefited England, but injured all other countries—The standard in the United States—Uneconomical policy of the government—The ratio in Europe before the Franco-German war—World-wide influence of this event—It occasioned a general rise of gold or fall of silver—The Nevada mines had no influence upon the event—Future probable tendency of the ratio.

IN the last chapter it was shown that in very ancient times silver was more valuable than gold; that afterwards gold became more valuable than silver, first in the Western World, and afterwards in the Eastern; and that the western and eastern ratios remained distinct up to a very recent date, silver having been always more valuable in the East than the West. The time when gold became more valuable than silver was assigned to the period of the opening of the Greek and Spanish silver mines by the Phœnicians; the equalization and union of the eastern and western ratios was stated to have taken place during the present century.

It was also shown that the ratio was produced by two influences, the first of which was the quantity of money in existence (irrespective of the material of which it was formed, but provided that some portions of it were of silver and gold) and the second the prevailing legal regulations respecting money; and that the relative cost of producing the precious metals had no bearing whatever upon their

value. So long as there were two ratios in the commercial world, a third influence was added to the two above mentioned. This was that of each ratio upon the other.

Although for the sake of perspicuity and convenience the relation of value between gold and silver has been classified into two great divisions, the eastern and western ratios, it should be stated that in point of law and fact there has been no such thing as either an eastern or a western ratio; the ratio in every locality being different and each country being a law to itself in this respect. Nevertheless, although thus independent, it does not escape the influence of surrounding countries; and with the intimate commercial intercourse that now exists between the various countries of the Occident, it results, as a matter of fact, that the ratio in London, the most important market in the world for the precious metals, is a pretty faithful representative of the result of all conflict on the subject, both economical and legislative, and is therefore a substantial indication of the average ratio of the Western world.

At the period of the discovery of America, the (average) ratio throughout Europe stood at about 1:11. The first important act of legislation upon the subject after this date was the Edict of Medina, issued by Ferdinand and Isabella in 1497, and fixing the ratio in the coins of Spain at 1:10·755.

As at one period previous to the discovery of America, viz., in 1483, the ratio in Spain had been fixed at 1:11·675, it has been imagined by some¹ that the Edict of Medina was occasioned by uncommonly large supplies of gold, which are assumed to have been obtained from America during the years which first followed the discovery.

A glance at the statistics of these supplies² should be sufficient to dispel this assumption. Up to 1497, and indeed for many years after, the amount of gold obtained in America did not exceed an annual average of £340,000,

¹ Humboldt, "Fluctuations of Gold," p. 11.

² See chapter xxii.

and everywhere throughout the correspondence between Columbus and the Court we find intimations of the disappointment of the latter at the trifling amount of metal obtained. It now remains to be shown that the Edict of Medina has been entirely misunderstood, and that instead of according a new ratio to the precious metals, it merely re-affirmed an old one. The following table shows the mint ratios of Spain for upwards of three centuries.

Mint Ratios of Spain.

Year.	Ratio.	Authority.
1475	10·975	"Memorias de la Real Academia de Historia," tome vi. Madrid, 1821.
1480	11·555	
1483	11·675	
1497	10·755	
—	—	
16—	—	
1641	14·00	Moran on Money, p. 44; and John Locke on Money, ed. 1823, vol. v. p. 206.
16— ¹	16·00	Sir Isaac Newton. Silver undervalued.
1730	16·00	Kelly's "Cambist." Relation of gold in the doubloon to silver.
1772	16·00	
1786	16·38	

From this table it appears that the ratio affirmed in 1497 was one that had been previously affirmed in 1475, seventeen years before the discovery of America or the new supplies of gold; and that therefore it probably had nothing to do with either event, but, instead, had flowed from the mint ratios of the Italian commercial cities of the Middle Ages, and found its support in the average ratio which prevailed in the principal countries of Europe at the time of its adoption. This ratio, as stated in a previous chapter, was about 1:11, or, omitting Spain, about 1:10 $\frac{3}{4}$.

¹ Mr. Rice Vaughan in a work published in 1675 says that "Spain, to raise a tribute on the people, hath extremely falsified the intrinsic value" of her coins; but it does not appear whether gold or silver was over-valued. Consult Harris on "Coins," ii. p. 122.

Starting from this point, viz. the period of the discovery of America with the European or western ratio at 1:11, there is no difficulty in perceiving the cause why silver has since almost continually fallen in value, so that now the ratio is little better than 1:18.

The mint charges in all countries have invariably been in favour of gold and against silver, varying at first from about 1 to $2\frac{1}{2}$ per cent. on the former, and from about $2\frac{1}{2}$ to 5 per cent. on the latter; to, latterly, nothing, or at most $\frac{1}{2}$ to 1 per cent. on the former, and 1 to $2\frac{1}{2}$ per cent. on the latter.

There is no room whatever to doubt that this discrimination against silver, exercised for centuries in the mints of every country of Europe and operating upon enormous sums of coin, has been fully competent to produce the result observed.

Every time specie had to be shipped to complete the exchanges between European countries, gold was always preferred for the purpose on account of the lower mint charges upon it, and the inferior loss sustained by the shippers upon its reduction to the coin of the country of its destination.

To this rule there has been an occasional exception. In the shipments of silver from America, to Germany, Holland, Russia, India, and such other countries as at various times adopted and sustained the single standard of silver, the metal was conveyed, directly or indirectly, from the countries that produced it, to those that consumed it; it was coined or recoinced but once, and therefore was not subject to discriminating mint charges.

But the mass of international exchanges in Europe and America have been effected with gold; not because the carriage of gold costs less than that of silver—it does not, freight charges upon the precious metals being predicated upon their value and not their bulk or weight;¹ but because

¹ This is strictly correct as to ocean freights, and generally as to land freights. Consult Cernuschi. As to express freights west of the Rocky

the seignorage exacted upon gold coins being less than that upon silver ones, the loss sustained by the shipper upon melting the former, either previous to or after shipment, was less than his loss would have been to melt the latter. As to obtaining his supplies from uncoined bullion, there is seldom enough of this to be had: the demand for coin always tending to attract all disposable metal to the mints.

Within a comparatively recent period the influence of quantity upon the relative value of the precious metals has been exercised through two comparatively new and very powerful agencies, the extensive substitution of bank paper, and afterwards of government paper for coins; and alterations of the metallic basis, or "changes of standard."

These agencies came into play at about the same period—the beginning of the eighteenth century. The first circulating bank notes in Europe (except a few by the Bank of Stockholm, established in 1668) were issued by the Bank of England, which was established in 1694. The first governmental circulating notes in Europe since those of the Mediæval Italian republics were those (if governmental they may be called) of the Royal Bank of France, under the administration of John Law. The first formal change of the metallic standard in modern times took place in Portugal in 1688, and nominally in England in 1717.¹

It has already been shown that (owing to the practice of enacting mint charges which discriminate against silver), when a nation, at least when a modern nation, parts with its metallic stock, gold is the metal preferred by exporters; and this metal is therefore always the first to be exported. This gold being recoinced in the country to which it has flowed, it there enters into the circulation and assists to

Mountains of the United States, it seems that the *ad valorem* freight charge upon silver is about half as much again as upon gold. See examination before the present writer of Mr. John J. Valentine, questions 126 and 127. "Report of U.S. Monetary Commission," vol. i. App. p. 47.

¹ See "History of Money," by the writer.

raise the level of prices therein. As its subsequent withdrawal would, other things aside, occasion a fall of prices to their previous level, this withdrawal is usually resisted by every influence of law or commerce which the spirit of the times or the institutions of the country permit.

Some authors maintain that the ancients never forbade the exportation of the precious metals,¹ but this is incorrect.² At all events such restrictions were universal during the mediæval ages; formed the basis of the mercantile system of two centuries ago; were maintained in most countries down to a late period; and, in some countries, are in force to-day. When the agency of export restriction cannot be employed to prevent the outflow of gold, recourse is had to arbitrarily raising the rate of interest in government banks, and so of increasing the difficulty of obtaining gold to export. This is the method employed at present in Great Britain, France, Germany, and other countries.

The country which has parted with its gold now has but a single means of getting it back. This is to widen the ratio, to cheapen silver, to enhance the value of gold, to pay more for this last-named metal, and thus to buy it back at a value higher than that at which it was parted with.

It was doubtless the perception of this great principle (aided by the product of Brazil, and the Methuen treaty which enabled England to obtain the benefit of and handle this product) that led that country, after Portugal, to adopt Sir Isaac Newton's advice, and effect such a disposition of its mint laws as practically to render gold coin its only money; an arrangement which was ratified by subsequent legislation, particularly and finally by the Act of 1816, and the resumption of specie payments in 1823. Newton's sagacity enabled him, perhaps, to foresee that so long as England continued to remain, as she had already become, the banking centre of the world, she would profit by every

¹ Boeckh, book i. chap. ix.

² "Exportari aurum non oportere, cum sæpe antea senatus, tum me consule, gravissime judicavit." Cicero, *Orat. pro L. Flacco*, cap. 28.

exchange of bullion that passed between other countries; because by their own mint laws these exchanges would naturally and inevitably always be effected in gold. Thus, other things aside, gold will continually rise in value; and England, by adopting it for money, keeping a large stock of it always on hand, and making her contracts payable in the same metal, would continually profit by the operation.

But what has benefited England has injured the world at large.¹

Take the United States, for example. Between the termination of the American Revolutionary war in 1783, and the resumption of specie payments in England in 1823, there had accumulated in the States some £3,600,000 or £4,000,000 in gold.² These had been purchased at the ratio of 15; for this was the ratio which had been adopted by the United States government in 1790. Between the peace of February, 1815, and the year 1820 all this gold must have been exported to England; for we are informed that from 1820 to 1834 the only coins circulating in the United States were of silver.³ In order to introduce gold into the currency the Americans raised its price. This they did by widening the ratio in 1834 to 16, and at this price was purchased the whole of the 50 millions which are estimated to have been in the country upon the breaking out of the Civil War of 1861, to say nothing of a sum of gold, probably equally great, which was meanwhile used up in the arts. Between 1862 and 1863 they sold the bulk of this gold at the equivalent

¹ As a general rule of statesmanship—to which there are, of course, exceptions—measures of fiscal policy which fit the affairs of England, are ill suited to other countries, because being the possessor of the greatest reserves of coal (mechanical power) and wealth (capital), she has become the creditor of all the world. In order to counteract Sir Isaac Newton's system of money, the best policy for other nations would have been to adopt the single silver standard; and, so long as England retains the single gold standard, this will continue to be their best policy.

² Gallatin's "Reports on the Finances."

³ Report of Mr. White, Ho. Rep. 21st Cong. 2nd Sess., No. 95. Indeed, Mr. White says there was no gold in circulation so early as 1817; that it had all been shipped to England.

in merchandise of 16 in silver, and were recently purchasing some of it back by giving for it eighteen or nineteen times its weight in silver, until this absurd policy was temporarily arrested by the passage of the so-called Silver Bill. If this bill, however, is held not to permit the government to pay its debts in silver dollars, they will have to be paid in gold; and this gold will have to be purchased at a ratio, which, notwithstanding the supposed tendencies of the Silver bill, will be sure to continually widen in future as it has widened in the past. If it be asked why the ratio took nineteen centuries to narrow from 14 or 15 to 11, while it has only taken three centuries to widen from 11 to 18, the answer is, that after the Roman Empire had passed the meridian of its power, until the discovery of America, that is to say from the third century to the fifteenth, but comparatively few coins of gold and silver were minted in Europe; and whatever were the mint rules or other laws, or conflict of laws, that, as it is assumed, occasioned the general narrowing of the ratio from the period of the Peloponnesian war to the discovery of America, their practical operation was limited to a comparatively small amount of coin. Moreover as, except between the coasts of the Mediterranean, there was little or no commerce between nations during this period, and no exchanges to effect in specie, unless with India, the consequence of changing the standard was not understood or had been forgotten after Julius Cæsar made gold the standard in Rome; for even Pliny, who wrote but a few years after him, though for other reasons he anathematizes the author of the change, does not perceive in it any bearing upon the future history of money, or of the world.

It should also be remembered that up to 1873 the ratio stood at $15\frac{1}{2}$, a point to which it was held by the mint laws and the vast coinages of France, and still more by the rules of the Latin Monetary Union of 1867, which provided a means of obviating the necessity of melting any gold coins that might thereafter be paid between the countries which were parties to that Convention.

Long previous to this date, however, many of the legal supports that had contributed to uphold the existing ratio of Europe had been one by one knocked away; so that at this date it depended chiefly on the mint ratio and open mints of the Latin Union. Its other legal supports had perished with the suspension of specie payments in Russia, Austria, the United States, Italy, Spain, &c., and the practical closure of the mints of those countries to silver.

Consequently, when the important events next to be mentioned took place, the European ratio fell in a few years as far as, otherwise, it would probably have fallen only during the course of a century. These events grew out of the Franco-German war.

Germany in 1870 announced her intention to change from silver to the gold standard. This act by itself could have made no impression on the ratio; which, next to quantity, is chiefly affected by discriminating seignorages between the metals and the international movement of gold occasioned by such discriminations. But it induced France and the Latin Union to paralyze the operation of their mint laws (of 15½) upon the general ratio of the world, by suspending the free coinage of full legal tender silver. This was doubtless done to compel Germany to pay a higher price for the gold she would require; for it is creditable to French statesmen to say that, among all Europeans, they appear best to understand the technism of this intricate matter. The closure of the mints of the Latin Union removed the remaining barrier opposed to the fall of silver, deprived it of the most active means it possessed of being coined into money, and left it to the depressing tendencies of heavy seignorages in the few countries that continued to employ it for subsidiary coins.

As for the influence upon the ratio which has been attributed to the extraordinary production of the Nevada mines, and the diminished flow of silver to India—occurrences alleged to have occurred during this period—these arguments were answered so fully in the course of the investiga-

tion upon the subject undertaken by the author in connection with the U.S. Monetary Commission, that it is hardly worth while to devote any space in this work to it. The substance of this answer was that the world's normal product of silver had not increased, nor had the normal flow of silver to India diminished.¹

The existing conditions of the accumulated stock, the current production and the commercial demand for the precious metals, for the present preclude quantity from exercising any noticeable influence upon their value. That value therefore, both as it exists and evidently tends in the future, has its basis, substantially, in the conflict of the mint laws of nations, and in the operations of domestic mintage and international exchange.

APPENDIX TO CHAPTER XXVII.

TABLES OF THE RATIO IN MODERN TIMES.

THE time covered by this Minute is limited to the year 1760, for the reason that no annual average quotations at one place are attainable for anterior dates, and also because of the want of any comprehensive summary of the mint codes of leading commercial countries for an earlier period.

A legal ratio between the precious metals adopted in an important country, if coupled with full legal tender and unrestricted coinage at brassage or a moderate seignorage, constitutes, in effect, a standing offer to purchase all the current supplies of one metal at a fixed price in the other.

Hence the free-mint prices of important countries—that is to say, of countries whose practical ability to purchase metal is equal to, and whose mints are capable of coining all that may be offered—control the market ratio, and, except so far as modified by discriminating seignorages, by demand

¹ See examination of this question in "Report U.S. Monetary Commission," i. app. 81-89.

for the arts, for token coinage, and for export to Asia, they control it almost exclusively.

It is, therefore, essential to the understanding of a table of fluctuations between the metals to know what were the legal ratios in, or standing prices for, the metals offered by leading countries; and the capacity of their mints during the period covered by such fluctuations.

The following is a rough summary of these details relating to France, England, and the United States, the two former countries, with Spain and her colonies, having been the principal double-standard countries during the period under review. Reliable details relating to the Spanish and German coinage systems of the last century are not within reach.

France.—The optional standard¹ at $14\frac{1}{2}$ prevailed up to the year 1785, when it was changed to $15\frac{1}{2}$. This ratio was ratified in 1803, and is the one now nominally existing. The conditions of coinage up to 1803 are not set forth in any of the papers submitted to the writer. In 1803 the mints were thrown open unreservedly to both metals at the charge of brassage. In 1873 they were closed to silver. The capacity of the French mints, as indicated by the greatest coinage of any single year, was as follows:—Gold, year 1859, 702,697,690 fr.; silver, year 1811, 256,399,040 fr.

England.—The optional standard at 15·2 prevailed nominally from 1717 to 1816, when it was changed to gold, which is the standard now existing. The coinage throughout this period has always been called “free,” but in point of fact it costs a trifle more than the French charges of brassage.² In 1797 the mint was closed to free silver. The capacity of the British mint, as indicated by the greatest coinage of any single year, was as follows:—Gold, year 1853, £11,952,391; silver, year 1817, £2,436,298.

United States.—From and before 1760 to 1792 the silver

¹ Commonly called the double standard, that is when coins of either gold or silver are legal tenders to an unlimited amount.

² See vol. i. app. p. 230 of the “Report of the U.S. Monetary Commission.”

standard prevailed in the American States, but no silver was coined by the Government until 1794. From 1792 to 1874 the optional standard prevailed—from 1792 to 1837 at 15, and from 1837 to 1874 at 16; coinage unrestricted for both metals at charge of brassage up to 1873, when the mints were closed to silver. In 1878 the Government commenced a limited coinage of unlimited tender silver dollars at the ratio of 16, and for its own account. The capacity of the American mints, as indicated by the greatest coinage of any single year up to 1876, was as follows:—Gold, year 1851, £12,522,898; silver, year 1876, £3,825,300.

It may be added that the American mints can easily be rendered capable of coining the entire current production of the world, and as much may be said, perhaps, of the French and British mints.

The following tables exhibit the average annual market ratio between gold and silver from 1760 to 1878 inclusive, and the average monthly ratio from 1873 to the present time.

Table showing the average annual Ratio of Value between Gold and Silver—expressed, as is customary, in quantities of pure silver to one of gold—in the London market from 1760 to 1878 inclusive. Up to 1829, from Ex. Doc. 117, First Session, Twenty-first Congress; from 1833 to 1875, from Pixley and Abell's circulars; since 1876, from the weekly gold quotations of standard silver in the London "Economist."

1760	14·29	1773	14·73	1786	14·89	1799	14·29
1761	13·94	1774	15·05	1787	14·83	1800	14·81
1762	14·63	1775	14·62	1788	14·71	1801	14·47
1763	14·71	1776	14·34	1789	14·89	1802	15·23
1764	14·91	1777	14·04	1790	15·01	1803	14·47
1765	14·69	1778	14·34	1791	14·95	1804	14·67
1766	14·41	1779	14·89	1792	14·43	1805	15·14
1767	14·45	1780	14·43	1793	15·01	1806	14·25
1768	14·58	1781	13·33	1794	15·32	1807	14·46
1769	14·45	1782	13·54	1795	14·77	1808	14·79
1770	14·35	1783	13·78	1796	14·77	1809	16·25
1771	14·36	1784	14·90	1797	15·45	1810	16·15
1772	14·19	1785	15·21	1798	15·45	1811	15·72

1812	15.04	1829	15.95	1846	15.89	1863	15.36
1813	14.53	1830	15.73 ¹	1847	15.79	1864	15.36
1814	15.85	1831	15.73 ¹	1848	15.85	1865	15.44
1815	16.30	1832	15.73 ¹	1849	15.78	1866	15.42
1816	13.64	1833	15.93	1850	15.70	1867	15.57
1817	15.58	1834	15.73	1851	15.46	1868	15.58
1818	15.42	1835	15.79	1852	15.58	1869	15.60
1819	15.82	1836	15.71	1853	15.33	1870	15.57
1820	15.71	1837	15.83	1854	15.33	1871	15.58
1821	15.98	1838	15.85	1855	15.38	1872	15.63
1822	15.91	1839	15.61	1856	15.38	1873	15.92
1823	15.91	1840	15.61	1857	15.27	1874	16.16
1824	15.64	1841	15.70	1858	15.38	1875	16.69
1825	15.69	1842	15.86	1859	15.19	1876	17.83
1826	15.69	1843	15.93	1860	15.28	1877	17.20
1827	15.77	1844	15.85	1861	15.50	1878	17.94
1828	15.77	1845	15.91	1862	15.35		

Table showing the average monthly Ratio of Value between Gold and Silver—expressed, as is customary, in quantities of pure silver to one of gold—in the London market during the years 1873 to 1878 inclusive, calculated from the weekly gold quotations of standard silver in the London "Economist."

Month.	1873.	1874.	1875.	1876.	1877.	1878.
January	15.76	16.19	16.45	17.08	16.36	17.52
February	15.76	16.05	16.41	17.66	16.50	17.38
March	15.77	15.86	16.50	17.82	17.22	17.25
April	15.78	16.01	16.47	17.57	17.39	17.44
May	15.81	16.07	16.55	17.81	17.45	17.65
June	15.87	16.05	16.88	18.21	17.53	17.76
July	15.89	16.15	16.97	19.26	17.37	17.92
August	15.98	16.26	16.92	18.11	17.40	17.92
September	15.99	16.31	16.74	18.25	17.32	18.24
October	16.05	16.34	16.74	17.95	17.12	18.69
November	16.26	16.26	16.75	17.49	17.31	18.65
December	16.17	16.40	16.89	16.71	17.49	18.88
Average	15.92	16.16	16.69	17.83	17.20	17.94

¹ "Report of the Director of the United States Mint, 1876," p. 47. No other authority has been found for the ratios given for the years 1830, 1831, and 1832.

CHAPTER XXVIII.

PRODUCTION OF PRECIOUS METALS NOT SUBJECT TO CONTROL.

Production of the precious metals cannot be regulated at will—Conquest or discovery may increase the fulness of an already overstocked market, or their failure intensify a pre-existing dearth—Historical instances—Not so with other commodities—Chances of producing the precious metals not insurable—Different with other commodities.

IN trying to discover the influences which govern the market value of a piece of gold or silver, it must be remembered that the quantity produced from time to time of these metals cannot be regulated at pleasure. Their acquisition cannot be accelerated when they are scarce and dear, nor retarded when they are plentiful and cheap.

The gain of gold and silver by conquest does not only happen after they have become scarce to the conqueror, nor does their loss occur only after they have become plentiful to the conquered. The discovery of a rich placer or a new mine may take place when gold and silver are already plentiful; and the highest practical degree of production from these sources may continue for centuries to press upon an already overstocked market. On the other hand, though these metals be ever so scarce and dear, and the incentive to new production be ever so great, it may not be possible to produce any more of them; and this dearth may continue for centuries.¹ It follows, therefore, that the production of the precious metals cannot, like that of other commodities, be regulated at will. The production of other commodities is the result of economical considerations; the production of the precious metals is the result of chance.

¹ India affords a striking example of this sort.

From the moment when the Romans reached the limits of their mechanical resources in the silver mines of Spain, about the beginning of our era, until the silver mines of Potosi were opened in 1545, the entire supplies of either or both of the precious metals were insufficient to make good the current impairment of the world's stock from wear, tear, and loss; and the stock continually diminished.

From the conquest of America, 1492-1533, until the discovery of the placers of Brazil, 1670, the Western world's annual product of gold did not in any decade exceed £600,000 a year; from 1691 to 1720 it rose to an average of about £2,000,000 a year; from 1720 to 1750 to about £4,000,000 a year; after which it fell to £2,000,000 a year, and continued to remain at this rate until the Russian and Siberian placers were fully opened (about 1840), when it rose to over £4,000,000 a year.

Within a score of years from this time both the Californian and Australian placers were discovered, and in the year 1852 the world's annual product of gold rose to nearly £40,000,000; and during the whole period 1848 to 1873 it averaged over £20,000,000. Will any reasonable person maintain that this long dearth of the metals, followed by such fitful and extraordinary accessions of plenty, were the results of human design? The thought is absurd.

If these great occurrences were not subject to design they were the result of chance—the chance of discovering or of conquering a country containing gold and silver, or gold and silver mines; or the chance of discovering such mines in countries already known; or the chance of finding rich deposits, or tracing new veins in such mines; or the chance of obtaining “paying” gravel in new or old placers; or several of these chances combined.

This is not the case with other commodities (except land). When any other commodity becomes unusually scarce or plentiful, when its price rises above or falls below the normal or customary level, diminished or increased production, which can be regulated at the pleasure of man, soon restores the

old price to its former level, or confirms the superior equity of the new one. In these cases the cost of production determines the price. All other commodities are commercial ones. Land and the precious metals are, to a certain extent, political commodities. Land is altogether a political commodity; the precious metals are partly political and partly adventitious—they are political so far as they are acquired by conquest; they are adventitious so far as they are acquired by mining. The price of improved land, or of the precious metals, does not regulate their acquisition; and neither excessive nor insufficient acquisition regulates their price. If the practical considerations of conquest and discovery, on the one hand, and growth of population and exchanges, on the other, be omitted, the economical rule that value is as cost of production might apply to these commodities as well as to others; but these considerations are too important to be omitted. They are greater than the rule; they form a rule by themselves.

Nor are the chances of acquiring the precious metals calculable or insurable, like those minor chances which affect the lives of individuals in particular years, or the production of commercial commodities in particular seasons. The chances of a person's death, of personal accident, of fire, of a good or bad harvest, of a successful or unsuccessful voyage at sea, of loss by robbery, of prosperity or disaster in trade, and many other chances, are reducible to a determinable probability, and may be insured by the payment of a small premium, or an allowance for guarantee or endorsement. In all peaceful and progressive States there are underwriters who, for such a consideration, will insure against death, accident, fire, bad harvests, shipwreck, or robbery; there are capitalists who will endorse a manufacturer's or a trader's note or bond; but there are none who will insure the acquisition of new lands or precious metals, which wait not upon individual effort, but upon the fortunes of war and of geographical and geological discovery.

Unless it be contended that the conquest and plunder of

America, the discovery of the silver mines of Potosi and the auxiliary quicksilver mines of Huancevalica, the discovery of the Brazilian, Russian, Californian, and Australian gold placers, &c., were all foreseen and determined upon beforehand, it cannot be maintained that the increase of the production of silver and gold, brought about by these events, was in response to the intensity of current demand, or the perturbations of current prices.

Unless it be argued that the Roman miners in Spain intended to reach the limit of their mining resources at the time they did so; that the flooding of Potosi in the hands of the Spaniards was pre-arranged; that the precise period of the exhaustion of the Brazilian placers during the eighteenth century was foreseen; that the political revolution and closure of the mines in Mexico and South America during the first quarter of this century were calculated beforehand; and that the reduction of the gold yield of California proper from £14,000,000 in 1853 to £3,000,000 a year at the present time, were all effected in obedience to variations in the demand for silver or gold, the doctrine that the value of the stock, or even of the current supplies, of these metals is due to cost of production, is worthless.

For if the production cannot be controlled at will it is due to causes beyond man's bidding or foresight; and the metal produced under such conditions may either cost nothing, or it may cost far more than it is worth, when thrown upon a market already filled with the accumulations of ages.¹

¹ "Any increase in the production which our imagination could call into existence would appear infinitely trifling compared with the accumulations of thousands of years now in circulation." Humboldt, "Fluctuations of Gold," Berlin, 1838.

CHAPTER XXIX.

COST OF FREE MINING.

Individual mining in California—Number of miners—Wages—Product—Cost of gold five for one—Hydraulic mining also a losing industry—The product of the Comstock quartz mines cost five for one—Even the Big Bonanza has not paid—Australia exhibits similar results—Free mining for gold or silver an unprofitable industry, even in the richest mining countries.

THE population of California in the year 1802 was about 1,300; in 1831 it was about 5,000; in 1846 to 1848 it was about 15,000; and in 1849 about 37,500; excluding Mission or Christianized Indians in all these years. These Indians numbered 15,562 in 1802, and 18,683 in 1831.¹

According to the Federal census of 1850 the population of California in mid-summer of that year numbered 92,597. This census, however, was incorrect. Some of the returns were lost or destroyed by fire before they reached Washington; and others were incomplete. For these reasons it was estimated that about 72,500 souls were omitted, including many women, and that the total population was in reality about 165,000.

By the State census of 1852 the total population was 255,122, of whom about 210,000 were males chiefly of the working ages, or say between eighteen and forty-five. The Federal census of 1860 gave for the total population 379,994, of whom 273,588 were males; seven-tenths being of the working ages. In 1866 a census of the State was taken by the United States Bureau of Statistics, then under the

¹ De Bow's "Resources," i. p. 271, and MacCulloch's "Gazetteer."

Directorship of the writer. The work was done by the internal revenue officers, who were directed to make domiciliary visits for the purpose, and was accomplished without any expense to the Government. The officers returned a total population of 476,409, of whom about two-thirds or 317,606 were males, and 200,000 of these of the working ages. This was the first census ever attempted to be taken by these means, and the returns, though not faultless, were regarded as coming within 3,000 or 4,000 of the true number, a result that encouraged a similar effort in the following year. A census of the same character was taken in 1867, the results of which were regarded as correct. This gave 500,039 as the total population, of whom 325,025 were males, and of these 195,000 were of the working ages, showing a decrease in the numbers of this class.

This was not the first indication of such a decrease, the same thing having occurred in the interval from 1852 to 1860. This phenomenon is attributable to the death of many of the early pioneers and the return of others to the countries whence they had originally emigrated; their places in the total numbers of the population being filled by children born in California since the gold discoveries. On account of this last named circumstance, although the number of males of the working ages twice diminished, the total number of males including children has always increased.

According to the Federal census of 1870 the total population of the State was 560,247; of this number 349,479, or about 62 per cent., were males, and of these 194,935, or about 56 per cent., were of the working ages.

The general rate of increment between the years 1860 and 1870 was on the average about four per cent. compounded annually.

If this rate be applied to the numbers returned in 1870, the population of the State in mid-summer of 1878 was about 766,500.

These various data and some other can be reviewed at a glance in the following table.

Year.	Males, 18 to 45.	Per cent. of Males, 18 to 45, to total Males.	Total Males.	Per cent. of total Males to total Popu- lation.	Total Females.	Total Population.
1848	5,000	—	—	—	—	15,000
1849	25,000	—	—	—	—	37,500
1850	119,000	85	140,000	85	25,000	165,000
1852	175,000	83	210,000	82	45,122	255,122
1860	91,500	70	273,588	72	106,406	379,994
1866	200,000	63	317,606	66 $\frac{2}{3}$	158,803	476,409
1867 ¹	195,000	60	325,025	65	175,014	500,039
1870 ²	194,935	56	349,479	62	210,768	560,247
1878	225,000	50	450,000	59	316,500	766,500

In seeking to ascertain the cost of the production of gold in California it is deemed safest to confine the calculation to the period from 1848 to 1856 inclusive. The reason for this is that, substantially, up to and including 1856 the production was mainly the result of manual labour, the value of the machinery and power employed having been quite small. On the contrary, since 1856 the production has been assisted in an augmenting degree by machinery and power; so that at the present time very little of it is due to mere hand labour.

In preparing the materials for a calculation of this character the greatest difficulty has been found in ascertaining the local price of daily labour. The accounts vary so much that it has been no easy matter to choose a mean in each year that seems to be wholly free from objection. The rates chosen are, however, believed to be entirely within the

¹ A portion of the increase shown in the returns of the internal revenue officers to the Bureau of Statistics for 1867 over those of 1866 is probably due to the increased perfection of the work rather than to actual increase of the population. The actual population in 1866 was probably about 480,000.

² The census of 1870 shows 238,648 persons engaged in industrial occupations. Of this number 13,780 were females, domestic servants, factory and shop girls, &c., leaving 224,868 as the total number of occupied males. Of this last number 29,933 were under 18 or over 45 years of age.

mark. In the first place they are in every case less than those mentioned by writers contemporaneous with the years to which they relate, and themselves miners or personally familiar with the state of affairs about the mines; and the rates of wages have been made less because of the presumption that such writers would rather be likely to mention exceptionally high rates of wages, than to take the trouble of ascertaining the true average rate.

Secondly, the rates chosen are fortified by the concurrent scale of the prices of the necessities of life at the mines. This is in fact the true basis of any calculation of the sort. It is not whatever exceptionally high rate of wages which the sudden discovery of gold itself may establish, any more than it is the lower rates to which the miner may have been accustomed in the country whence he emigrated, or the still lower rates current in other countries, but it is the rate which (leaving the greater risk of life and health out of view, because these risks are pecuniarily incalculable) will purchase for the miner, on the spot, those articles of subsistence or material comfort to which he has been accustomed, or without the aid of which he could not cope with the difficulties of the work to be accomplished in the mines.

As an evidence of the moderateness of the rates assumed it should be stated that even at a later period than the date on which the table ceases, the wages paid to miners throughout California was 10s. to 12s. per day, and on the Comstock lode 16s. for eight hours' work; and that the services of the many intermediaries who administer the affairs of the mines, refine and assay the bullion and carry it to market, are compensated by much higher rates.

An effort will now be made to estimate the number of persons working in the placers, or otherwise employed in producing the gold, and putting it on the market in San Francisco, each year during the period above named, together with the local price of the labour of such persons, the value of their combined labour each year, and the actual product of gold at its mint price.

Year.	Workers.	Local price of each man's labour per day.	Value of their combined labour for the year of 300 days. ¹	Actual Product of Gold, Mint value. ²
1848	5,000	£3 0 0 ³	£4,500,000	£2,000,000
1849	22,500	3 0 0	20,250,000	8,000,000
1850	115,000	2 8 0	82,800,000	10,000,000
1851	120,000	2 0 0	72,000,000	11,000,000
1852	130,000	1 12 0	62,400,000	12,000,000
1853	140,000 ⁴	1 8 0	67,200,000	13,000,000
1854	150,000	1 4 0	54,000,000	12,000,000
1855	160,000	1 0 0	48,000,000	11,000,000
1856	150,000	16 0	36,000,000	11,000,000
			£447,150,000	£90,000,000

¹ Garnett, p. 36, says that 300 days ought to be allowed to the working year. Hittell, p. 298, says 250. As the miners often worked at night as well as in the daytime, and paid no regard to either Sundays or holidays—indeed, worked incessantly so long as gold was in sight and strength remained—Mr. Garnett's view is regarded as preferable. Some of the pioneers jocosely say that 400 days to the year was nearer to the mark.

² This column gives the product of all the United States (according to the late U.S. Mining Commissioner) and includes what little gold was produced in the Eastern States.

³ Powell, "Land of Silver," p. 15, states miners' wages in 1848 at £3 per day. Soulé (Tooke, vi. 851) states them to have been £4 to £6 at least, and labour difficult to procure even at these rates. In 1853 and 1854 mechanics in San Francisco received £1 to £2 per day. (Soulé in Tooke, vi. 855.) They received 16s. to £1 in 1878. Hittell, p. 306, says that common labourers received £1 12s. a day at ditching in 1851. Ditching is now (1879) done for 10s. to 12s. per day by white labourers, and somewhat under half these prices by Chinese. That miners' wages in 1848 to 1850 were an ounce of gold a day, and that from this they fell to half an ounce a day in 1851 to 1854, is the substance of information received by the writer from several of the pioneer miners of California. The prices of food, clothing, fares, medicines, tools, and implements were so high, that it was difficult to support life even at these rates. Traders' profits were enormous. One old merchant stated that he had repeatedly bought gold-dust for its weight in silver coin. Another that he had bought a lot of scythe blades at a shilling each, and sold them at £20 each, &c., &c.

⁴ Capron in his "History of California," written in 1854, estimated,

If to this table be accorded the merit of approximate correctness, it follows that the £90,000,000 of gold produced in California from 1848 to 1856 inclusive, cost in labour alone some £450,000,000, or five times its mint value.

The number of workers assumed is far within the mark. Little or no allowance has been made in the table for the labour employed in transporting, refining, assaying and coining the product, and which contributed to render it as valuable as is stated in the last column. The value of this labour being omitted, the gold should really be reckoned only at the price it fetched at the diggings, and this in the earlier years was not more than 16s. an ounce, or scarcely one-fifth of its ultimate market value. Neither has any allowance been made for the time lost by the labourers in preparations for the journey, and on the journey from their former places of occupation to the mines. This would average about six months to each person. Nor has any allowance been made for the labour of several thousand Indians who at various times worked in the placers.

That the rates of wages are also within the mark is evident from the prices of commodities at the diggings given in another part of this work,¹ from which it will be seen that in order to obtain those necessaries of life to which it is to be presumed the miner was accustomed elsewhere, and moreover which it was necessary that he should obtain in order to fit himself for the work of the mines, he had to earn the wages indicated or perish.

During the early days of the placers the average product per man, if the gold could have been sold at the mines for its mint value, say £1 per ounce, was £400 per annum. When the gold was sold by the miner at 16s. per ounce, his presumably to the close of the preceding year, that the diggings had yielded from the outset £52,000,000; that there were then 140,000 miners at work (without counting several thousand others engaged in transporting the gold to market, refining, assaying, &c.), and also without counting "60,000 others who have returned to their homes, or have died on the field of their hopes."

¹ See chapter on "Labour, Diet, and Privation at the Mines."

earnings were reduced to £100 per annum, a rate which at the prices then current for the necessities of life was inadequate to procure the barest subsistence. When it is remembered that £400 was the average rate of production, and that thousands failed to earn even this much, some idea can be formed of the amount of suffering that ensued.

From an average of £400 per annum in 1848 the product, even assuming that the gold was sold at the mines for its ultimate market value, which in fact was far from true, fell in 1856 to an average of £73 8s. per annum, or about 4s. a day; a sum entirely insufficient to support the miner.

The consequence of these facts was that thousands of men in the gold-fields perished from privation, disease, and destitution; and those who escaped from this fate were too often sacrificed in those fierce quarrels which arose from the envy and despair of their less fortunate companions. If the lives of these hardy adventurers were worth anything to the country, not five, but rather fifty for one was the relation of the cost of California's gold to its mint value.

In the gold mines of California at the present day, 1879, machinery and power are employed to so large, and bare labour to so small an extent, that any estimate of cost of production based merely on the value of the labour employed would fall so far short of the mark as to be grossly misleading. The placer mines are long since exhausted so far as individual mining is concerned, and the gold is now obtained by hydraulic processes and from quartz mines, in both of which industries, and in the former even more than the latter, machinery and power usurp the place of hand-labour. And yet so unprofitable is gold mining that if the whole of the vast capital which has been sunk or which may still remain employed in these enterprises were to count for nothing, the production would fall short of the current outlay, for it does not cover the bare cost of labour. There are now 30,000 to 40,000 labourers engaged in the mines.¹

¹ Hittell, in 1874, said 30,000, but the number is believed to be nearer 40,000. "Resources of California," by John S. Hittell, p. 298.

Taking the lower figure and reckoning the men's wages at 10s. per diem,¹ and 300 working days to the year, the product should amount to £1,500,000 in order to be remunerative. According to Mr. Valentine, whose estimates are rather over than under the mark, it is only about £3,000,000.²

In wages alone, to say nothing of capital employed, the gold mines of California at the present day are a source of loss to the extent of £1,500,000 per annum.³

If the statistics of the doré and the silver mines are consulted, similar results will appear. The most prolific and celebrated of the former class are the Comstock mines, (Washoe, Nevada), and of these the greatest were the Consolidated Virginia and California—known collectively as the Big Bonanza.

The Consolidated Virginia, consisting of 108,000 (afterwards subdivided into 540,000) shares, sold in January, 1875 at £140 per share, or £15,000,000; the California,

¹ This is the present rate of wages in the California gold mines and for the lowest grade of white labour in the towns; although, judging from the great numbers and murmurs of the unemployed, these rates have a tendency to fall. Mechanics' wages in San Francisco are quoted commonly at 16s. to £1 per day; the cost of living, chiefly owing to high rents and professional services, a high rate of retail profits to cover high rents, &c., and to numerous trade monopolies, is somewhat more than it is in the Atlantic cities.

² Valentine's estimates of the gold product of California for the calendar year 1877. Wells, Fargo, and Co.'s circular, dated San Francisco, December 31, 1877. For the method employed in making these estimates, and their liability to error, see testimony of Mr. Valentine, taken before the present author on behalf of the U.S. Monetary Commission, "Report," i. app. p. 32 *et seq.*

³ To persons unacquainted with the process of sluicing or "hydraulics"—the miners call it "hydraulicking"—and the enormous expense of obtaining adequate supplies of running water at the levels required for these purposes, the amount of capital needed to be laid out in gravel mines would seem incredible. The writer has the balance-sheet of one of these mines before him. The industry was organized in 1866. Already £468,971 have been laid out, of which nearly one-half has been for ditches, reservoirs, pipes, and other water properties. The product of gold has thus far been only £158,528, and yet this is regarded as a very promising and valuable property.

consisting of 540,000 shares, sold in the same month at £158 per share, or £17,000,000, together £32,000,000. Up to the present time the gross product of this ore body, now exhausted and selling at £1 per share, has not reached three-fourths of this amount; while the amount paid in dividends has been scarcely £14,400,000.

When instead of its richest ore body alone the whole Comstock lode is taken together—unproductive¹ as well as productive mines—the unprofitable nature of gold and silver mining becomes more manifest. Taken at the highest price which each mine at one time or another has brought, the Comstock lode has cost about £120,000,000 to £140,000,000. It has thus far produced less than £60,000,000 at a working outlay of about £30,000,000. The first cost and working outlay (assessments included) to the proprietors have been about £150,000,000 to £170,000,000 and the income about £30,000,000. Each pound's worth of doré has consequently cost to the owners about five pounds.

If from California and Nevada we turn to Australia, the mining of gold in that country will be found to have been attended with similar results.

According to the very careful investigations of the Australian Commission on Mines in 1854-5, the gold product of Australia in 1852 averaged only five ounces per month per capita; three ounces during the first half of the year, and six ounces during the last half. By 1854 this average had fallen to 1½ ounces (about £5 12s. as sold in the market) per month per capita.

At Bendigo the Commission found that the Port Philip and Colonial Gold Company were employing miners at twenty shillings *per day*; while the evidence of some

¹ Some of the deepest and most expensive mines on the Comstock, as the Bullion, the Overman, and many others, have never yielded any metal at all. None has been found in them, and still the search goes on—a search in solid rock nearly half a mile beneath the flank of a mountain.

miners went to show that this sum was scarcely the average product of each miner *per week* upon the same gold field; and an average, too, of very precarious attainment. One witness quotes the case of an employé of this company who, after saving a surplus of wages, went off for a time to independent digging, but proving unsuccessful returned to his former employment.¹

These mistaken and delusive rates of miners' wages raised the rates of all wages, and occasioned great loss to the agricultural and pastoral industries of the colonies, in which farm hands and shepherds had to be employed at \$5 a day.²

The commissioners reported that in 1855 the operations of the unskilled miner were rapidly becoming unprofitable, and that the future production of gold in Victoria would depend upon quartz mining and the application of machinery.³

Taking Victoria by itself, the principal gold-bearing district of Australia, there were employed in 1865 in alluvial mining 441 steam-engines, besides numerous water-wheels and horse-puddlers, 4,131 machines of various kinds, 4,428 sluice-boxes, 648 sluices and toms, and 62,131 miners. The quantity of gold obtained from this source during the year was 1,093,801 ounces, worth about £4,400,000, yielding an average of a little more than one dollar a day to each miner.

In the same year there were employed in Victoria in vein mining 491 steam-engines (of 8,806 horse power), 62 engines driven by water or horse power, numerous machines and labour-saving appliances, and 17,326 miners. The quantity of gold obtained from this source during the year was about 450,000 to 500,000 ounces. Taking the latter figure to be the true one, the value of the product was about £2,000,000, yielding on an average 7*s.* 8*d.* per day to each miner, to say nothing in either case, whether of alluvial or vein mining, of officials, overseers, office expenses, capital

¹ Tooke, vi. p. 848.

² Ibid. vi. 845.

³ Ibid. 848.

and machinery employed, cost of transportation to market, licences and royalties to the Crown, wear and tear of life at the mines, and the physical devastation of the country.¹

The average result of both alluvial and quartz mining was about £80 per year, or £1 12s. per week per miner with machinery.

The following table shows the number of miners at work in Victoria each year since 1856.²

Year.	Miners.	Year.	Miners.	Year.	Miners.	Year.	Miners.
1856	} 130,000	1861	100,463	1866	73,479	1871	58,121
1857		1862	93,379	1867	65,857	1872	54,651
1858		1863	92,994	1868	63,181	1873	52,544
1859	125,764	1864	84,986	1869	68,007	1874	46,800
1860	108,562	1865	79,457	1870	60,367	1875	41,717

Between 1871 and 1875 there were over 1,100 steam-engines, and from 25 to 30,000 other labour-saving machines, costing altogether more than £2,000,000, employed in the gold fields and mines of Victoria,³ yet with all these advantages, the average annual product per man during the eight years 1860 to 1867 inclusive was only £72 8s.,⁴ and during the five years 1871 to 1875 inclusive about £80.

The "Melbourne Argus" of January 16, 1875, in reviewing the gold mining industry of the Colony of Victoria during the previous nine years, notices its decline, the limited earnings of the miners (an average during the

¹ These details will be found in "Phillips on Mining," and are from the official blue books. For evidence of the extraordinary prevalence of insanity in Australia, see reports of colonial authorities, published in "San Francisco Chronicle," Nov. 11, 1878.

² The average for 1856, 1857, and 1858 is estimated. The figures for the subsequent years from 1859 to 1865 inclusive, are from the "Monthly Report U.S. Bureau of Statistics" for July 31, 1869, and from 1866 to 1874 inclusive from the same series for January 31, 1875, p. 295. The figure for 1875 is from the Colonial Blue Book.

³ Colonial Blue Book, 1878, p. 147.

⁴ "Monthly Report U.S. Bureau of Statistics," July 31, 1869.

same year of about 34s. per week), and concludes with these words: "Looking at these returns, and taking into consideration the rate of wages paid to miners upon the gold fields, it appears pretty evident that *gold mining taken as a whole*, however beneficial it may be to the community, *scarcely pays a fair rate of interest for the capital and labour expended in it.*"¹ It may be observed in this place that the facts will bear a much stronger inference. According to the report by Mr. Consul Thomas Adamson, jun., to the State Department of the United States,² dated November 1, 1873, the total area of the auriferous alluvial and quartz ground actually opened up in the colony of Victoria is 1,063 square miles, and the number of distinct quartz reefs known to be auriferous is 3,398. Yet so thoroughly has this vast extent of country been searched and torn up for gold, that the average annual production of each miner is now reduced to £96 16s. (it had been less for many years previously), the wages of such miners as are employed are reduced to £2 to £2 8s. per week, and many of them are abandoning the mines and seeking a living in agriculture. Whereas in 1866 the mines employed 73,577 men; in 1872 they employed 52,965; in 1873, 50,595; and in 1874 only 45,151, nearly one-half of these numbers being quartz miners and one-fourth of the whole number Chinese.³ In his report dated October 2, 1876, the same consular officer says⁴ that "gold is dead and wool is king," that gold mining in Victoria is in a moribund state; the mining towns have become depopulated and are crumbling to ruins; the vein mines have been explored to such great depths as to render it unprofitable to proceed further, and that in Melbourne, as in San Francisco, stock gambling has usurped the place of sober industry.

¹ "Monthly Report U.S. Bureau of Statistics," January 31, 1875, p. 295.

² "Commercial Relations," 1875, p. 868 *et seq.*

³ Martin's "Year Book," 1877, p. 764.

⁴ "Commercial Relations," 1876, p. 512 *et seq.*

When these wages of labour and returns for capital invested are compared with those obtained at the same times and in the same localities in other occupations, it will be seen that gold mining in Australia has not merely failed to remunerate the workman and capitalist—it has proved, as in California, a source of loss to both.

But perhaps a stronger, because a more obvious, proof of the unprofitable character of gold and silver mining is afforded by its inability as an industry to support a large population. California, as a mining country, has now been open for thirty years; Australia about twenty-five. They are both maritime countries, and therefore comparatively easy of access. They are both agricultural as well as mining countries, and therefore owe some of their population to other causes than the search for gold. Yet California to-day does not contain more than three-quarters of a million of population, nor the mining colonies of Australia, viz., New South Wales, Victoria, New Zealand, and Queensland, over two millions. Any comparison of these figures with the populations supported by the purely agricultural States which were settled at about the same time in the Mississippi Valley, and therefore most remote, difficult, and expensive of access, will prove the superior ability of agriculture, if not to attract at the outset, certainly to retain and permanently support, more numerous and better bestowed communities. This conclusion applies to every great mining country in the world: to Greece, Spain, Mexico, the Western Coast of South America, and Brazil.

Compared with States of like area, surroundings, and circumstances of settlement, whose populations have depended upon agriculture rather than mining for their support, the agricultural States will always exhibit a superior capacity for supporting population and for supporting it permanently and in better condition.

Apart from the unprofitable character of gold and silver mining, which is due to the necessity of selling the product in competition with a vast accumulation of like metals stored

up from the ages, the superiority of agriculture over mining is due to the fact that in the former industry the same field can be used over and over again perpetually, while in the latter it can be used but once. Nature does not renew her deposits of the precious metals, at least within any period which renders the increment available to man.

CHAPTER XXX.

VALUE DUE TO QUANTITY.

Free mining dates substantially from California—Previous opinions as to cost of the metals erroneous—Views of Aristotle, Locke, Smith, and Mill—Prevailing deduction derived from analogy—Source of its fallaciousness—The precious metals and improved land not subject to laws applied to other commodities—Gradual and constant accumulation of gold and silver—These commodities chiefly derived from inheritance—Their cost only to be reckoned in the slavery and blood of perished races.

THE acquisition of the precious metals by means of free labour is an industry which dates substantially from the opening of California. The mines of all ancient countries, even those of the Greek republics, were worked by slaves; of the Roman mines under the Commonwealth we have no accounts. The mines of Spain under Carthage, and afterwards under the Roman empire, were worked by slaves; and so were those of every country subject to Rome. This fact is of little consequence in the present connection, and at the present time, because no matter how these mines were worked, their products fell into the hands of military conquerors, who got them for nothing, except the lives of the soldiers employed in the conquest.

The mines of mediæval Europe were worked by slaves and feudal villeins; the mines of Spanish and Portuguese America by the enslaved native races, thirty millions of whom were sacrificed to extract their product, which, besides this sacrifice of life, cost nothing to Spain, to Europe, or to the world. Until recently, the mines of Russia were worked by serfs and convicts, those of Mexico and South America by

peons; in fine, free mining began with the present century, substantially with California.

Hence the economical opinions which have hitherto gained ground, as to the cost of the precious metals, have necessarily been deductive. They have never been subjected to the test of experiment; and like other deductive opinions, which held long sway in the world, when so tested, they turn out to be wrong.

Aristotle was very cautious about expressing an opinion on the subject. Some people, he said, thought that silver had a value dependent on the circumstances of its production, or its usefulness in the arts; while others regarded it as having no value, except what it derived from arbitrary compact, "so that if those who use it should alter their sentiments, it would be worthless and unserviceable for any necessary purpose."

John Locke held that "the intrinsic value of silver, considered as money, is that estimate which common consent has placed upon it"—an opinion of little utility unless the grounds of such common consent can be ascertained.

Adam Smith, after citing a number of facts, establishing the extremely hazardous and uncertain character of mining in the Spanish colonies, facts which, coupled with the knowledge of the system of slavery by which these mines were worked, should have enjoined great caution in an expression of opinion concerning the cost of the precious metals, held that the lowest price of these metals was their market value; that their "highest price" was determined by the scarcity or plenty of the metals themselves; and that their "price" was "regulated all over the world by their price at the most fertile mine in it."¹

John Stuart Mill followed the opinions of Smith, not, however, without misgivings as to the cost of slave labour, and the influence of the accumulated stock of the metals. He says nothing with regard to conquest.

¹ "Wealth of Nations," book i. chap. xi. part ii.

Money he holds to be "a commodity, and its value is determined like that of other commodities, temporarily by demand and supply; permanently, and on the average, by cost of production."¹ Still regarding money as a commodity, he holds that its value "conforms permanently, and in a state of freedom almost immediately, to the value of the metal of which it is made." These qualifications deprive this illustrious writer's opinions on this subject of any practical value. They fail to afford any guide to the value of money not produced or not valued in a state of freedom; or of money which is not a commodity, as assignats or greenbacks, promising nothing. Proceeding with increased caution, he says that the conformation of the value of money to that of the metals of which it is composed takes a "long time" to occur, on account of the greatness of the accumulated stock of these metals: how long he omits to say.²

Further on he even holds the extraordinary opinion that the "cost of production in the long run regulates the *quantity*, and that every country (temporary fluctuations excepted) will possess, and have in circulation, just that quantity of money, which will perform all the exchanges required of it, consistently with maintaining a value conformable to its cost of production."³

¹ Mill, "Polit. Econ.," book iii. chap. vii. § 3.

² Tooke, who was himself a believer in the doctrine that the cost of the precious metals determined their value (iv. 224), was, however, astute enough to discern the fallacy of stating a dynamical proposition in statical terms and without regard to time of movement. Alluding to another phase of the money question he says: "The abstract argument assumes that the quantity of money being doubled, prices will be doubled; *alluding in the faintest manner, if at all, to the length of the interval which will elapse*, and to the magnitude of the changes which will take place in connection with the process. But it is precisely these omitted elements which constitute the essence of the question." "Hist. Prices," vi. 195. The italicized passage might well be applied to Mr. Mill's views on cost of production, if indeed there was not this stronger argument against it, that in point of fact the value of gold and silver has never yet conformed to the cost of producing these metals, since that cost has been ascertainable, viz. since the era of free mining, which commenced with California.

³ Mill, "Polit. Econ.," book ix. chap. iv. §§ 2 and 3.

It is hardly necessary to adduce the opinions of others, for it is to those of these greatest of thinkers that the action of mankind has conformed. The doctrine held to-day throughout the world, with regard to the value of the precious metals, is that it represents their cost of production; and upon this doctrine rest both law and administration.¹

And yet this opinion has never been subjected to the test of experiment—first, because such experiment, until very recently, could not be made upon a sufficiently large scale to be satisfactory; and, second, because the prevalent belief seemed to rest upon so firm a ground that an inductive test of its correctness appeared to be unnecessary. This ground was analogy, a process of reasoning which Bastiat truly regarded as the most fruitful source of fallacies.

The analogy is this—the value of many commodities, such, for example, as manufactured goods, is known by experiment to be limited and conditioned by the cost of production. Being true as to these commodities, the principle has been deemed to be true as to all commodities, including the precious metals.

Granting the doctrine to be substantially true as to manufactured goods, and also substantially true (though less absolutely) as to agricultural and commercial products, it can nevertheless be shown that in respect not only of the precious metals, but also of land, it is not true; and that these commodities possess peculiarities which lift them altogether above the scope of the rule.

It is the peculiarity of land and its appurtenances, houses, roads, &c., and of the precious metals, that they survive the date of their acquisition more than a few years; everything else is consumed, wasted, or destroyed. Other commodities have, therefore, only to do with the Present, while land and the precious metals are connected with the Past. Thus all other acquisitions are chiefly the products of the living

¹ This view was asserted by the President of the United States in his veto of the so-called Silver Bill.

generation, while these are mainly inheritances from the dead.

These commodities, therefore, always exist in the form of an accumulation; there is no accumulation of any other. They are indispensable, there have as yet been devised no satisfactory substitutes for them; there are acceptable substitutes for all other commodities.

The area of arable and pasture land in all Europe seventy years ago was 885,000,000 acres; it is now about 1,015,000,000. Upon an accumulation so slow, and one whose beginning dates back to the most ancient times, the effect upon its value of any additional improved area, which a generation of men could contribute, would be infinitesimal and incalculable. The stock of the precious metals in the Western world in 1810 was about £380,000,000; it is now about £600,000,000—an accumulation so vast and yet so slow that the production of many generations might fail to exercise any influence on its value.

Even supposing that the prime cost of such newly improved land, and such of the precious metals as each generation may respectively add to the world's accumulations, is to be measured by the time and labour involved in their production, it nevertheless follows that this prime cost can only communicate itself to the whole mass in the quantitative proportions which the new accessions bear to the old stock. In other words, the man of to-day, in reducing wild land to a cultivable state (and this includes the placing of it under conditions of government, peace, security, and proximity to market, equal to those which surround the previously improved lands), comes directly into competition, not with his contemporaries, but with his dead ancestors, with the labour of bygone ages, with the whole world of men who existed before him. His work is no new creation, amenable solely to the laws which economists have deduced from a merely statical view of social conditions and relations; it belongs to time and to history.

It is the same with the precious metals. The gold and

silver miner of to-day does not obtain from the world all that his product cost him in time and labour. Far from it. The character of this product has placed him in competition with the pauper labour of his forefathers, with the slave labour of the feudal ages, and with the ensanguined but pecuniarily cheap fruits of remote conquests. No matter whether his gold or silver cost him more or less than its market value, he must sell it at the value which is occasioned by the influence of the stock ; and the nature of the industry is such (so hazardous) as to render it impossible for him to make the comparison between average cost and average price, or to govern his production by the result. Hence, as a rule, he continues to mine the precious metals long after the industry ceases to be remunerative to him, little suspecting with what dead and forgotten producers in the past his labour has to compete.

The swords of Darius and Alexander are yet our competitors in establishing the value of gold and silver. The ravages of Cæsar in Gaul and Scipio in Spain are still, through the use of metallic money, permitted to influence the markets of the world ; while Cortes, Pizarro, and the host of other Spanish American conquerors, whose important contributions to our present stock of the precious metals were obtained through the foulest of crimes, virtually survive, to weigh their ill-gotten gains against the products of honest labour.

CHAPTER XXXI.

FURTHER OBSERVATIONS ON COST AND VALUE.

Previous to free mining the precious metals were obtained chiefly through conquest and slavery, and cost little or nothing—Nevertheless they possessed a high value, which, therefore, was not derived from cost—Under free mining they cost more than their value; so that here, too, value did not follow cost—Their cost of really no consequence—Their value regulated by quantity; not their own quantity alone, but the numerical volume of the whole currency—Opinions of practical men as to cost of the precious metals.

AS the question whether or not the value of the precious metals is derived from the cost of their production is all important in the enactment and disposition of public measures relating to money, it may perhaps be worth while, even though at the risk of seeming tautological, to increase the arguments which bear upon this subject.

It has been seen that a portion of the vast accumulation of the precious metals which the world possesses, whatever its origin, was obtained by its present possessors through conquest, or the labour of conquered races, and therefore in a pecuniary sense cost little or nothing. A second portion was obtained through domestic slavery, serfdom, or villeinage, the cost of which it is impossible to ascertain. The third portion was obtained by free mining, and at a cost far in excess of the market value of the metals.

The reasons why such an unprofitable industry as free mining has been and continues to be pursued, have been shown, and so have the causes that compel the free producer of gold and silver to dispose of the fruits of his industry for less than they are worth when measured by the efforts it cost to produce them. These causes are chiefly the influence

of the accumulated stock, the uncontrollability of the production, the gambling character of mining, and the employment of other materials than the precious metals as money.

If after these conclusions, fortified as they are throughout this work by a more or less careful scrutiny of the facts and considerations bearing upon them, it be insisted that, nevertheless there must be some economical law which determines the value of the precious metals, the answer is that that law is the volume of the currency.¹

Under circumstances of entire freedom in the laws concerning the production and coinage of the precious metals, and supposing that they could always be obtained by labour devoted to mining, and with no accumulated stock to influence the question, and supposing that there existed no substitutes for the precious metals as money, the cost of production would doubtless have an important bearing upon their value; as the case stands, the cost of production has so little to do with the matter, that, for all practical purposes, it need not be considered at all.

Notwithstanding the fact that these metals, when obtained through conquest or slavery, cost little or nothing, they possessed, in ages when conquest and slavery were the chief means of their production, a higher value than they do now. During the Dark Ages, for example, prices were much lower, and the value of gold and silver much higher than it

¹ Since writing the above, Prof. Jevons's "Primer of Political Economy" has been published. In his chapter on exchange that able writer admits that it is quite certain that labour is not the cause of value (p. 101). While agreeing with him in this respect, we regret to be unable to agree with him as to what does cause value. He attributes it to supply and demand, which, so far as it goes, is well enough; but is too loose and general. He then considers supply or production as a necessary result of labour: and thus traces the source of value to labour. But here he not only contradicts himself; he is in error as to the fact. Production does not always follow exertion; the labour vainly expended in searching for the precious metals furnishing one illustration, and the precious metals obtained by violence, and therefore without labour, furnishing another. But after what has been already said on this point, it is of little consequence to pursue the argument further.

is now. It follows that the value of gold and silver in those times could not have been derived from their cost. Their cost was nothing, while their value was high. Since the era of free mining these metals have cost more to produce than they fetched in the market. It follows here, again, that their value could not have been derived from their cost. In the former case they cost nothing, and bore a high value; in the latter case they cost several times as much as their value. It is evident that not cost of production, but something else, regulates their value. That something, as before stated, is quantity—the accumulated stock; and since gold and silver coins may be over-valued in the law, and made to pass for a higher value than bullion, and since other things besides gold and silver circulate as money and serve precisely the same purposes, and are readily given or taken for them, it is the accumulated stock, or in other words the volume of all money or currency, that regulates the value of any portion of the mass.

What the precious metals cost to produce is therefore a matter of little or no consequence, except as a means of refuting the fallacious doctrines which have been founded upon this question. The regulation of their value is not cost, but quantity; and their quantity is due to the unforeseeable and uncontrollable chances of discovery, conquest, and mining; to the progress of the accumulated stock; and to the laws which over-value coins, or permit the use of credits or numeraries in their places. In a word, the value of the precious metals is governed by the volume of the currency.

The fallacy that value is always as cost of production, though upheld by economists, has never been admitted by practical men—men who were familiar, of their own knowledge, with the conditions surrounding the production of the precious metals.

Mr. Joseph Harris, who in his connection with the British Mint was well acquainted with these conditions, published in 1757 an essay on money and coins, which for extent of

information and soundness of doctrine on the subject has rarely been excelled. On page 73 of this work the author says:—

“The value of bullion doth not, like most other things, keep pace with the prime cost at the mines.”

On page 77 of the same work he says:—“Any given sum or quantity of money will have its value in a certain proportion, as it is a part of the whole stock or quantity in currency, and any increase or diminution of the whole will, in proportion, lessen or increase the value of any given sum,” meaning without respect to prime cost.

Mr. William Jacob, whose admirable “History of the Precious Metals” evinces an intimate acquaintance with the subject, thus expresses himself with regard to the cost of metallic money:—

“It is probable that in all ages these metals (gold and silver) have cost more in their production than their value ever repaid. And if the amount of human sufferings in the earlier ages of the world could be reduced to a money valuation, and to them were to be added the evils derived from them by their derangement of existing conditions in society, it would become doubtful if the increase of industry which at particular periods has been caused by it, has been more than a balance to the misery they have occasioned.”¹

Mr. Lewis A. Garnett, formerly manager of the San Francisco Assaying and Refining Works, whose vocation necessarily rendered him more or less familiar with the production and conditions of mining in California, published a pamphlet on the “Rapid Decline in the production of the Precious Metals in the United States,” dated San Francisco, 1869, on page 36 of which he calls gold and silver mining “a very hazardous and unprofitable pursuit,” and continues as follows:—

“Nearly all writers persist in repeating the old dogma of the political economist that ‘the value of the precious metals

¹ Jacob, “Hist. Precious Metals,” vol. ii. 101.

depends upon the cost of production,' *whereas such has never been the case.* A practical test applied to our own production will fully illustrate this fact. No one will deny, it is presumed, that within the United States there are at least 100,000 persons engaged *directly* in the process of extracting the precious metals. Now, to say nothing of the immense amount of capital invested in mining machinery and other incidental expenses, such as the salaries of engineers, superintendents, agents, secretaries, &c. &c., but simply taking the minimum day's wages of these 100,000 men, and which they could earn at any other pursuit, to wit, 12s. per day, and for 300 days, we have £18,000,000 *as the cost of labour alone*, to produce £10,000,000 of the precious metals, or £1 16s. 0d. to the pound sterling produced. It would be entirely safe, therefore, to say that every £1 produced costs £2."¹

"The fact is, that the production of the precious metals has always been one of those fascinating pursuits which the love of venture as well as adventure inherent in man seems to create, and which the romantic and exciting vicissitudes in individual fortunes, to which it not unfrequently gives rise, continues to excite and sustain; and such seems to have been pretty much the case at all times and in all countries."²

¹ It has already been shown in chapter xxix. that the cost of gold and silver in the United States under free mining, is about five to one of value.

² See also MacCulloch's "Commercial Dictionary," article "Mining Companies," p. 862.

CHAPTER XXXII.

PLACER, VEIN, AND HYDRAULIC MINING.

The conditions of recent mining a guide to those of all mining—Placer mining always remote from civilization—Essentially a rude handicraft, requiring neither capital nor co-operation, and attracting adventurous and lawless characters—Vein mining, on the contrary, demands capital, skill, and co-operation—Its social influences similar to those of placer mining—Different from all other industries—Question concerning its continuance.

HAVING now surveyed the production of the precious metals, together with the circumstances that accompanied such production from the remotest times to the present, it is proper to inquire into the influences which this singular industry has had upon the welfare of mankind.

The few circumstances bearing upon this subject which history has preserved from forgetfulness have been already mentioned. The numerous other circumstances which history has not preserved, must be inferred from the surroundings of recent mining. Before examining these, however, it will be necessary to point out the important distinction that exists between placer and vein mining.¹

Gold is sometimes obtained from placers and sometimes from vein mines; silver is obtained only from the latter.

A placer mine is a field or bank of sand, gravel, or clay, usually the bottom of some river, containing a deposit of gold, pure or nearly so, in nuggets, pellets, or grains.

¹ This distinction is casually noticed in Job, chap. xxviii. ver. 1. Among modern authorities, the illustrious Humboldt has paid the most attention to it. See "Fluctuations of Gold," pp. 8 and 9.

Sometimes the placer is the bottom of some ancient river, left by the denudation of surrounding lands high above the level of existing watercourses. This is the case with some of the placers of California. They were formed in what were once the valleys of rivers, but which have since become the tops of elevated ranges of hills, the adjacent country having all been washed down to lower levels. Sometimes a placer is found on the sea-shore, as is the case in many places along the coasts of Portugal, Spain, and California.¹

The essential characteristics of a placer mine are three in number. First, during its productive period it is always and necessarily situated at a great distance from the centres of civilization. Such a period lasts, at best, but a few years; and with a numerous population dwelling in the neighbourhood it would hardly last more than a few weeks. Second, placer gold is found in a free or pure state and needs nothing but melting and simple refining to fit it for immediate use. Its preparation therefore demands no chemical knowledge and involves no difficult mechanical processes. Third, placer mining is a rude handicraft in which every miner works for himself. No co-operation, no machinery other than a simple rocker, no capital beyond the miner's frugal outfit, is required for its prosecution.

In vein mining all these conditions are reversed. In such mines the gold or silver is found mingled with foreign and generally worthless material, the combination being called an ore; and this requires to be treated by mechanical or chemical processes, often of a difficult and tedious character. The deposits are subterranean, and the veins

¹ Placers of this kind are to be found on the ocean beach near the city of San Francisco. Very recently these placers were announced as a new discovery and "located" by a number of idle workmen, whose object seems to have been to sell their "claims" to ignorant persons. It turned out that the deposits had been known for nearly thirty years, and had long since been pronounced valueless. They consist of microscopic scales of gold, so diffused in black sand as not to be worth the trouble of recovering. A recent ride to the beach assured the writer that these claims had been again abandoned.

of ore, usually quite narrow, are enclosed in a matrix of quartz, which in turn is hemmed in by walls usually of granite, lime, &c.

The direction of the vein from the surface is downward, either vertical or slanting, so that to follow it always means to go deeper.

Vein mining demands tools competent to penetrate rock, machinery to crush ore, means to remove water from great depths, chemicals to separate the precious metals from their worthless mingling, vast masses of timber to support the shafts, tunnels and galleries of the excavations ; and the co-operation of numbers of men.

The outcroppings, or first discovered surface and exposed portions of a vein mine, having been cleansed by the elements operating through long periods of time, are usually free from foreign matters and can be worked with almost as little difficulty as a placer. Hence, such outcroppings were worked in many countries long before the application of machinery and metallurgical processes, to the mines : for instance, in India, Egypt, Arabia, Bactria, Greece, Sardinia, Spain, Mexico, California, Australia, &c. But after these portions of the mines were exhausted, the working had either to be abandoned, or else continued with mechanical and chemical appliances and systematic co-operation. The vein mines of Asia and Africa, whose outcroppings were secured in very ancient times, and the mines abandoned, have never been further explored ; whilst those of ancient Europe have been, some of them during the mediæval period, others, as those of Spain, both during the mediæval period and at a more recent date ; the silver mines of the last-named country yielding at the present time, at depths of from a quarter to half a mile, as much metal per annum as their outcroppings probably did to the ancient Carthaginians.¹

¹ In his testimony before the British Silver Commission, Sir Hector Hay estimated that silver to the amount of £1,000,000 a year was obtained in England alone by the smelting of Spanish argentiferous ores. Report 2, pp. 19 and 51. For more complete accounts see the present

An unskilled man, alone and without capital, can work a placer; to work a vein mine deeper than the outcrop demands co-operation, skill, and capital. Hence, while vein mines by reason of the co-operation and capital needed for their development become in a measure nuclei of society, government, and peace—placer mines develop independent of these aids; and attracting at the outset, from their necessary remoteness, only the most adventurous and reckless characters, become, on the contrary, centres of lawlessness and crime.

From their extremely hazardous and uncertain character both placer and vein mines have a tendency to encourage gambling, improvidence, and dissoluteness in the surrounding community. These influences are strongest when they proceed from placer mines, because in these the deposit of the precious metals is in the nature of a find, and the hurried and brutal scramble which ensues for the coveted prize becomes a prolific source of violence and social disorder.

There is an intermediate class of works, partaking partly of the character of placer and partly of that of vein mines, which require to be mentioned in this connection. These are beds or placers in which the gold exists in such minute particles and at such depths in the earth that vast masses, sometimes entire districts of the latter, have to be removed and washed over in order to secure the deposit. This removal and washing are effected by means of artificial streams of water, with a pressure of sufficient force to effect the needful mechanical results. Such placers, from the process employed to obtain the gold, are known as hydraulic mines. The process was fully known to the Romans, who pursued it on a large scale in ancient Spain.¹ It has been employed in California for more than twenty years past, and is now being introduced into Brazil. In some cases the water is brought partly by open canals, partly by enclosed pipes from a distance of a hundred miles; and coming from a higher level

writer's essay on the productive resources of Spain in "Transactions of the American Philosophical Society," January 15, 1875.

¹ Pliny, "Nat. Hist.," book xxxv., and Diodorus, v. 27.

than that upon which it is employed, it acquires force enough to wash away vast areas of auriferous land into the valleys and streams below. The physical devastation occasioned by this process of mining must be seen to be appreciated. To say that it completely ruins the land for agricultural purposes is to say the least. It ruins it for ever. Not only this, it chokes the neighbouring streams with rocks and sand; it fills up the adjacent arable valleys with similar débris, and its devastating effects extend to the harbours of the coast, which it soon renders unfit for navigation.

While these injurious results proceed chiefly from hydraulic mining, similar ones follow all mining for the precious metals. In placer mining vast masses of earth and gravel are washed into the streams, and the latter are often turned from their natural courses, in some instances to the detriment of navigation, in others to the injury of agriculture. In vein mining, the neighbouring forests are cut down for fuel to smelt the ores or timber the mines, and this, when carried on to a sufficient extent, is followed by an interruption to the accustomed rainfall, or the premature melting of the snows, and the conversion of peaceful streams into foaming and destructive torrents.

It will thus be seen that mining for the precious metals is an industry which differs from all others in its influences and effects upon the physical, the social, and the moral welfare of a country, and that these influences vary with the three classes of mining—placer, hydraulic, and vein—by which the precious metals are obtained. It is now designed to trace these influences somewhat more in detail. In this way a groundwork may be obtained for a general consideration concerning the profitableness of seeking for these metals. In this design it will be convenient to begin with the physical devastation occasioned by mining.

CHAPTER XXXIII.

DEVASTATION CAUSED BY MINING.

Physical ruin of the Roman Empire—Due to disafforestation and mining—Devastation caused by mining in California—Hydraulic mining—Washing away of gravel hills—Injury to arable lands—Choking of streams and harbours—Disafforestation—Hydraulic mining expected to last for a century.

THE territory of the ancient Roman empire was situated chiefly in the principal and secondary basins of the Mediterranean, and embracing all of Southern Europe, Northern Africa, and Asia Minor, together with Persia and the remoter East, which may be comprised in this general survey, it included a surface larger than that of all Europe, and at one time or other may have supported a population scarcely less numerous. At the present day this portion of the earth is nearly altogether withdrawn from human use ; it is substantially a desert.

The causes of this extraordinary desolation are attributed chiefly to disafforesting, and to those destructive forces which operate upon the earth when it is deprived of a due extent of arboreal covering.¹ This disafforestation was largely due to the mining operations of the early races. Not only were the aboriginal forests cut down to supply fuel for smelting purposes, and timbers to support the mining excavations, but their re-growth was prevented by the ravages which mining committed upon the fertile portions of the land.

These ravages, however, operated as a more direct and perhaps important source of the general devastation alluded to ; and mining for the precious metals may, both directly

¹ Marsh's "Earth as Modified by Human Action," chap. i.

and indirectly, be regarded as the principal agent in the physical, and consequently in the ultimate social, decay of Arabia (Sabia, Media, &c.), Asia Minor, Greece, Carthage, Spain, Italy, and the Islands of the Mediterranean. In modern times the sinister consequences of mining are to be traced in the desolation of many parts of Mexico, the Isthmus, and the countries of South America, which were overrun by the Spaniards and Portuguese. The desolation that befell the countries of the Mediterranean now awaits those of the Northern Pacific. In California, particularly, it is proceeding at a rate that has already seriously damaged the face of the country.

The process began with the opening of the placer mines, when every part of the land suspected of containing gold was torn up, ransacked, and left to the action of the rains, which conveyed the sand and gravel into the rivers, and strewed them over the arable valleys. The area of surface thus torn up is estimated to have amounted in 1862 to 10,000,000 acres.¹ At the present time it amounts to, perhaps, more than double this area. Before the placers failed to induce further explorations of this sort, hydraulic mining came into vogue. This dates back so early as 1850.² Streams of considerable volume are diverted from their natural channels and conducted to great distances in canals or wooden flumes, or sheet-iron pipes, and then directed against the hills, or those vast level surfaces of ground which it is necessary to remove to reach the gold-bearing strata, or which themselves contain deposits of the precious metals.³

¹ "U.S. Agricultural Report," 1862, p. 598.

² Hittell's "Resources," p. 305.

³ Marsh, p. 632. It must be understood that the "gravel hills" of California are the remains of ancient river beds. These hills were once the bottoms of rivers, and the ancient enclosing hills and high lands have been washed down to a level beneath them; so that the ancient bottoms have become hills. The existing streams, such as the Yuba, cut through them, and expose their auriferous deposits. This natural exposure is called a placer, where the largest pieces of gold were found. Away from the river are the gravel banks, which are now being washed into it by artificial streams of water brought from distant mountains.

In 1867 there were 6,000 miles (including branches) of artificial watercourses employed for mining purposes in California.¹

It is estimated that up to about the year 1870 some £4,000,000 had been expended in constructing mining ditches,² and that the wooden flumes, of which the majority of them consisted, do not last on the average more than six to ten years.³ In 1871 the total number of mining ditches was 516, their aggregate length 4,800 miles, and their daily supply of water 171,000 miner's inches, each discharging $94\frac{1}{4}\frac{5}{8}\frac{1}{4}$ ths cubic feet an hour. Some of this water is used for only ten hours a day, and all of it for only seven months in the year.

One hydraulic company, employing ten men at 16s. per day each, and 200 inches or 4,000 gallons of water, washed down 224,000 cubic feet of earth in six days, and though there was only obtained from it £600 in gold (about $\frac{1}{2}$ ths of a penny to the cubic foot) £470 of this was profit. Another company used 2,000 inches, or 40,000 gallons of water for 100 days, and washed down 1,000,000 cubic yards of gravel (containing less than $\frac{1}{4}$ th of a penny to the cubic foot), and tained £6,400, of which £2,400 was profit. The cube of earth washed down was 1,100 feet long, 300 feet wide, and 80 feet deep.

At the present time, 1879, the number of mining ditches is 640; their aggregate length, 6,585 miles; the daily supply of water, 260,000 inches. As some ditches are used only ten hours a day, this is reckoned equal to 200,000 inches running twenty-four hours a day. As on the average the mines can only be worked so as to equal seven months of full time during the year, the actual consumption of water is about 714,370 million gallons a year, or 1,956 million gallons for each and every day. The present annual yield of gold in the State is about £3,600,000 a year, of which one-third is from quartz mines, and the remainder from

¹ "Rep. U.S. Mining Com.," 1870, p. 476.

² Hittell's "Resources," p. 306.

³ Ibid.

hydraulic mining and drifting. The present rate of production from hydraulic mining is expected to remain constant for a century or more to come, with a slight tendency to increase during the first twenty-five years.

Naked hills and fertile soils are alike washed away by the artificial torrents brought to these mines, and the material removed—vegetable mould, sand, gravel, pebbles—is carried down by the current, and often spread over ground lying quite out of the reach of natural inundations, burying it to the depth of sometimes twenty-five feet. An orchard valued at £12,000, and another estimated at not less than £40,000, are stated to have been thus sacrificed; and a report from the Agricultural Bureau at Washington computes the annual damage done by this mode of mining at the incredible sum of £2,400,000.¹ The subject having been brought to the attention of the Legislature of California a commission was appointed in the early part of 1878 to investigate the matter. This commission is still in session, and has not yet published a report.² Among the testimony given before it, as published in the newspapers, was the following:—

On Bear river 50,000 acres of land are liable to be ruined by mining débris; the channel of the river has been filled up, and the water spreads all over the adjoining country; in some parts of the valley the débris is fifteen to twenty feet deep; the land covered by the débris, which consists of sand and gravel, is entirely ruined; the railroad company has been compelled to raise its bridge three times.

On the Yuba river 12,000 acres of good land had been destroyed by mining débris; this damage was estimated at £400,000. In 1853 the Yuba was a clear stream; it commenced shoaling badly in 1857; near the mines the bed had been raised 150 feet. In 1874 the city of Marysville alone was damaged to the extent of £100,000. So great is the mass of débris already in the Yuba that if mining

¹ Marsh, p. 633.

² Since writing the above a report has been published which emphatically supports the views herein expressed.

were stopped now the sand would continue to come down the river for years.

On the Feather river the damage done was of the same character and scarcely less extensive. With one exception the witnesses thought that the remedy lay in the building of levées. The exception was that of a banker of Marysville, who had formerly been a miner, and had had much experience in the industry. He declared that levées could palliate but not cure the evil, and that this could only be remedied by putting an end to mining.¹

The Sacramento river commenced shoaling badly in 1853. At Steamboat Slough, where there were formerly ten or twelve feet of water, there were now but five. In other places the water has decreased from five or six fathoms to as many feet. Places where steamers ran in 1850 are now dry land. San Pablo Bay has greatly shoaled. At the city of Sacramento, the river has been lessened in depth 18 feet by mining débris. A bar, nearly an island, has formed in Suisun Bay. The harbour of San Francisco is being rapidly shoaled by deposits washed down from the mines.

As it is averred that there is enough "pay dirt" in the gravel beds for a century further of hydraulic mining with existing appliances, it is quite evident that the witness Jewett is right. In the course of a century there will scarcely be a gravel hill, scarcely a trace of the ancient river bed left in the State, and vast tracts of land will, by that time, have been reduced to the condition of deserts of sand and stones.

While gold mining has thus tended to bestrew the arable lands, fill up the streams, and shoal the harbours of California,

¹ Testimony of J. H. Jewett. Another witness, Col. Mendell (a civil engineer, much employed in large works on the Pacific coast) stated that in his opinion from one-third to one-half of the deposits in the rivers and bays was occasioned by ploughing in agriculture. A third witness, Mr. James O'Brien, a practical hydraulic miner and a farmer, thought that about four-fifths of the débris came from the mines, and one-fifth from ploughing; and this opinion seems to be supported by the general weight of the testimony.

silver mining has done much to deprive both that State and Western Nevada of their forest trees.

“Before the devastating hand of the miner was laid upon the timber of the foothills (of California) they formed one of the most delightfully wooded regions of the continent, overspread with a luxuriant carpet of grass and flowers from St. Patrick’s day till the Fourth of July, and even later in the summer. Disafforesting has done its work, and turned them into a desert from the last of April till the first rains,” about the month of November.¹ In a similar way the Sierras have been shorn of trees to timber the mines of Nevada, the winter’s fall of snow has been laid bare to the sun’s rays in spring, and the distribution of the waters has been disturbed. Destructive freshets now annually sweep through the valleys of California, and vast inundations cover the lowlands. In 1878 a considerable portion of the Sacramento valley was under water, and the city of Sacramento, the capital of the State, was flooded. The damage to buildings, roads, and movable property, can only be reckoned in millions.

In short, a process of serious geographical injury is in rapid progress. The bottoms of the rivers are so raised above their former levels that a large proportion of the arable lands, if not already reduced to the condition of swamps, must soon become so, for no system of levées can keep pace with the mass of débris capable of being deposited by the washings of 10,000 million gallons of water a day; and no diminution of this process is to be looked for so long as it pays to remove a cubic foot of earth which contains less than a farthing’s worth of gold.²

¹ “San Francisco Chronicle,” Feb. 20, 1878.

² This ratio is obtained from the actual experience of several of the hydraulic mines. The general average, however, is somewhat higher.

CHAPTER XXXIV.

INDUSTRIAL DISTURBANCE OCCASIONED BY MINING.

New placer countries disturb, but do not always extend industrial relations and resources—Abandonment of agriculture and other industries to work the Californian mines—Mining towns and settlements rarely permanent—The British North American Colonies, now the United States, not settled by miners—Mining ruins the land—Experience of Australia—Mining countries not the emigrant's Dorado.

THE historians of auriferous countries are apt to believe that, but for the mines, their countries would have failed to attain to wealth or importance. Says one of the latest of them, "The State would have been little better than a desert to this day, if the auriferous deposits of the Sierra Nevada had not been discovered. It was the gold yield that filled our valleys with people, planted our orchards and vineyards, built our cities, the Panama railroad, our Trans-continental railroad, and our coast railroad system; that established the mail-steamer line to China; that opened Japan to civilization and trade, and that filled the North Pacific with commerce. Without the help of this magician, San Francisco Bay would probably have been of no more importance in the business of the United States than Puget Sound is now."¹

These views will hardly bear the test of criticism. The Panama railroad was built with British capital, the Trans-continental railroad at the expense of the United States Government, which has also supported the China mail-steamer line with heavy subsidies; and as for the opening of Japan to civilization and trade, this was accomplished by the Portuguese more than three centuries ago, and again by

¹ Hittell, p. 298.

Perry in 1853, and on both occasions without reference to the mines of California.

But suppose all this were true, what then? It would simply amount to this, that so many people and so much capital had been removed from one place to another—in this case from the Atlantic States to the shores of the Pacific.

If it were shown that in benefiting the new land the old land had not been deserted or neglected; if it were shown that in either case the people had been benefited; then, indeed, might the social disturbances created by the discovery of gold in California be regarded as advantageous to mankind. But this is not shown; nor can it be shown, for it is not true.

There is no lack of arable land in the Atlantic States, and there was less lack when California was settled by Americans. Therefore, for every farm put under the plough in California, it follows that one must have been deserted in the East; and, *à posteriori*, we know this to have been the case.¹ Barring the idle and dissolute, who would certainly have been no more idle and dissolute in the East than they were in California, every man who worked in the mines was a man lost to some industrial pursuit elsewhere.

If the lands in the East had been thickly settled, if their productive forces were inferior, if the civil institutions of the country were illiberal or oppressive, if every man had not as fair a chance of becoming prosperous in any industry but gold mining, as in California, the case might have been different. But we know of no complaints on these heads. The plain fact is that several hundred thousand people journeyed many thousand miles by sea and land, exposed to every hardship and danger, in the hope of becoming suddenly enriched by picking up gold. Many of them perished on the way, or in the attempt. Those who survived, being frustrated in their hopes, turned for support in California to the very industries which they had deserted elsewhere—to agri-

¹ "Reports, Massachusetts Labour Bureau."

culture, manufactures, and what not. They had dwellings, railroads, ships, and other structures whence they came; but since they could not bring these with them, they had to construct additional ones in California, and, to do so, they had to devote more labour and capital to the purpose. It is these dearly-bought and, in a world-wide sense, superfluous conveniences that, when seen by the unthinking, are regarded as evidences of increased wealth to mankind, whereas they may be and generally are, evidences of labour (and life) lost, and of energy misspent.

It is not intended to discuss in this connection the comprehensive topic of emigration, nor to deny that emigration, both of men and capital, is generally beneficial to mankind: it is designed merely to show that it is not always nor necessarily beneficial; and that in the instance of California, apart from the open question of the advantage of increasing the general stock of the precious metals, it would be difficult to show that mankind has derived, or is ever likely to derive, any benefit from it at all commensurate with the social and industrial disturbances which such emigration brought about.

Some of these effects of the rush to the gold-fields will now be illustrated by extracts from letters and books written at the time, and in the vicinity of the newly discovered placer mines:—

“Monterey, August 17, 1848. We reached San Francisco, July 20, and found that all of its male inhabitants had gone to the mines. The town, which a few months ago was so busy and thriving, was then almost deserted. . . . Along the whole route (to the mines), mills were lying idle, fields of wheat were lying open to cattle, houses were vacant, and farms going to waste.”¹

“The greater part of the farmers and rancheros abandoned their fields to go to the mines. . . . The vast majority of all the labouring classes in the country had certainly deserted

¹ Colonel Mason, in Bryant's “What I Saw in California,” p. 456.

their former pursuits, and had become miners; while many others—merchants and their clerks, shopkeepers and their assistants, lawyers, surgeons, officials in every department of the State, of the districts, and in the towns, runaway seamen and soldiers, and a great variety of nondescript adventurers—likewise began the search for gold.

“In some parts of the country hundreds of acres of fine wheat will rot in the fields from the impossibility of getting labourers. . . . Common four-ox waggons are hired at £10 a day. In one case, I have known a negro cook to be employed at £5 a day.”¹

As to the ruin of the industries which these men had forsaken, it is the common notion that the gold-fields of California furnished employment to otherwise unemployed men, but this is not the case. Even of the few thousands who hurried from the various parts of California to the diggings in the early part of 1848, before any gold-seeking immigrants had arrived from the East, we see from Colonel Mason’s letter that a portion were farmers who had abandoned their fields to the cattle, and mechanics who had thrown down their tools of trade, and left their mills to rot.

“During the month of June, 1849, nearly two hundred square-rigged vessels lay in the harbour of San Francisco, deserted by officers, crews, and passengers, who had all gone to the mines.”²

These instances might be greatly multiplied were it needful. Together with the well-known fact that the exodus to California left many farms and other industries deserted in the East, they serve to establish the further fact that, barring the indolent, dissolute, and criminal classes who flocked to the mines, the new settlers as a rule, and particularly those who did not stay in the mines, left as many sources of wealth elsewhere to suffer from absence and neglect as they succeeded in building up or creating in California.

¹ Captain Folsom, in Bryant, p. 470.

² Cronise, “Natural Wealth of California,” p. 57, San Francisco, Bancroft, 1868.

Taken by itself, it is a matter of no consequence to mankind, or to the people of the United States, whether California is settled or not; no more than it is whether Arizona is settled, or Africa, or the Antarctic continent. Only when such settlement affords advantages to the world which otherwise could or would not have been obtained, does it become important; and this has yet to be shown in these arguments with reference to California.

Nor does it follow that because the gold discoveries attracted some of the Atlantic population to the Pacific shores, they would not have been attracted by other advantages, were there any to be found there. The Eastern States of North America were not peopled by gold-seekers; yet no greater or better bestowed community than the population thereof exists anywhere.

And if we contrast the various countries of the world that were settled by gold-seekers with those that were not, we shall find that if the argument *post hoc ergo propter hoc* is worth anything at all, it is in every instance to the disadvantage of countries so settled. Contrast Lydia with Italy, Greece with Gaul or Germany, Spain with England, and Mexico or South America with the eastern portion of the United States; and in every case we shall find that the gold and silver countries have fallen into decay, and the countries without the precious metals risen to wealth and power.

The argument, however, lies deeper than the fallacy alluded to; and when pursued beyond that point there will be found a physical reason at bottom which entirely changes its complexion. This reason is that to obtain the precious metals man has to destroy the land; and, therefore, that so far from the settlement of a mining country being a source of congratulation to mankind, it is really cause for regret, for it commits so much of the earth's surface, the scene of such settlement, to irreparable destruction.

If we turn from California to Australia, we shall find a similar abandonment of previously flourishing national industries, either local or distant, for gold mining; and a

similar enormous rise of prices near the gold diggings, which, while it perhaps benefited a few, could only have injured the many, since there turned out in the end to be no sufficient basis for it in the looked-for, but illusory, profits of mining.

The following extracts from commercial circulars despatched from Melbourne, Australia, to correspondents in England at the dates given, and republished in Tooke's "History of Prices," vol. vi. pp. 814 *et seq.*, will serve to support these statements:—

"November 1, 1851. The rush to the diggings has left the towns of Melbourne and Geelong without male population. Many labourers have deserted their farms and sheep pastures, and fears are entertained that sheep-shearing, the harvest, and other usual business of the country will remain unaccomplished."

"January 1, 1852. The general desertion of the able-bodied and labouring population for the gold-fields has seriously inconvenienced the course of ordinary business and social life. Building and improvements have ceased; families are left without servants; the crews of ships have mostly deserted; and the harvest is jeopardized."

"September 27, 1852. House-rent has advanced from £100 to £500 and upwards per annum; shops, to £1,000 and £1,500; and the value of real estate, tenfold."

In November, 1852, the desertions of crews, and loss, inconvenience, and discomfort occasioned by the rush of labourers to the mines, are again mentioned.

Australia, however, stands in so different a relation to her mother country compared with California, that in this case the gold discoveries, even though they proved, as we shall presently show they did prove, unprofitable, had a somewhat beneficial result to mankind.

England is a small territory, overcrowded with population. A great part of the land is sequestered for pleasure parks, or monopolized for the benefit of a limited class of landowners. The price of land is very high. None of it can

favourably compare in natural fertility with the lands of newer countries ; and, to be productive, it has to be manured at great expense, so that home-grown wheat cannot be sold in English markets so cheaply as wheat fetched from Russia or even California. The feudal system is far from being eradicated in England, and excessive rents for land, besides tithes and poor rates, are exacted from classes who, through the illiberality of the civil institutions of the country, are deprived of a fair share of production.

These circumstances rendered the gold discoveries of Australia of benefit to the labouring classes of England. They afforded something of a vent for an excessive, poorly bestowed, and somewhat oppressed industrial population—and to this extent they were beneficial ; but the limited degree of disadvantage suffered by the labouring classes in England, as compared with other countries, and the little advantage gained by them in emigrating to Australia, are shown by the fact that, although this emigration has been assisted by the Government to the extent of 175,000 gratuitous passages, the number of emigrants from the United Kingdom to Australia, including the period of the gold discoveries, has not equalled one-fourth of those who, during the same period of time, emigrated, without the assistance of Government, from the United Kingdom to the agricultural sections of North America.

It is not denied that the dispersion of crowded populations in Europe throughout the unoccupied parts of the earth is beneficial to the march and spread of civilization ; what is questioned is, that any cause, no matter what it may be, of such dispersion, should be regarded with favour. If such be the case, we must be prepared to approve of many things, which, though bad in themselves, have furnished the stimuli for such movements of population. We must approve of the expulsion of the Moors and Jews from Spain, of the Inquisition, the massacre of Saint Bartholomew, the persecutions of the Puritans and other Nonconformists in England, and, later on, of the Catholics in Ireland ; for all of these

causes stimulated the depopulation of Europe and the colonization of America. And, most absurd of all, must we in such case approve of polygamy and the other disgusting features of Mormonism; for there can be no doubt that to these institutions, so inviting to the sensual and depraved, must be ascribed the wonderful subjection and development of the great Salt Lake Basin.

CHAPTER XXXV.

SOCIAL INFLUENCES OF THE MINES.

Social character of the Lydians and other early mining populations—The first Argonauts of California—Whence they came—Their characteristics—The fierce struggle for gold—Violence and crime—Immorality—Drunkenness and gambling—Frequent assassinations—Alleged superior character of the Australian Argonauts—This view not founded in truth—Sinister lineaments of early Australian society.

JUSTIN, who wrote during the third century of our era, obtaining his materials from a still earlier historian, informs us that the Lydians were habituated to indolence, gaming, and licentiousness.¹ The Lydians were the inhabitants of the earliest gold-mining country of whose industry we have any account, and although Justin's opinion does not wholly warrant the conclusion that they derived the character he has given them from the influence of the mines, what we know of the population of other great mining countries leads us to believe that this was the fact.

Notwithstanding the immense lapse of time since the earlier Argonautic expeditions, and the scantness of any literature relating to them, it is not difficult to discern a common character in the populations of all the ancient mining countries of importance, Lydia, Greece, Italy, and Spain. Nor can the glamour which heroic history has thrown over their actions conceal from us the fact that this character belonged also to the Spanish and Portuguese gold-seekers in America.

Nevertheless, until we come to California and Australia, the social influences of the mines cannot be traced with that

¹ "Hist. Phil. Trans.," by Turnbull, ed. 1746.

certainly which would warrant any practical use of the inferences they afford. Here the view is a clear one. Here for the first time in history the mines were worked by free men. Here there was neither slavery, nor serfdom, nor peonage. The character of the miners did not come from the conditions of their service, as it might have done in all previous cases. In this case it can only be attributed to the nature of the industry ; and hence from the light obtained in this nearest view of the influence of mining we are enabled to go back some thousands of years in history, and determine the social influences of the mines in the most remote times.

Years have rolled over the graves that stud the gold-fields of California and Australia ; the histories, even the names of the dead are forgotten, and the circumstances of disease, destitution and violence through which they passed from life have fallen into oblivion. The best, often the only accounts of these scenes are contained in the newspapers of the day ; but as these are not accessible to the general reader, it has been deemed more desirable, though it greatly restricts the range of observation, to cite only such particulars as lie within general reach. In conformity with this plan the following details relating to early mining on the Pacific coast have been taken from volumes usually to be found in public libraries.

Gold was discovered in California, January 19th, 1848. Although the discoverers Marshall and Sutter tried to conceal their good fortune (it eventually ruined both of them) the news leaked out ; and in the course of a few months the diggings around their now historic mill were occupied by at least 4,000 men, of whom a moiety were Indians, some partly domesticated, and the others wild.¹

¹ Most of the authorities who give numbers agree upon these. Soulé, however, only allows 2,000 miners in May, 1848, and 3,000 in June. In August he allows 6,000. The discrepancy is due to his omission of the Indians, of whom, many of the white miners employed from 30 to 100, and some even 200. These auxiliaries, whose food previous to the gold

As to the white miners, it will be profitable to consider their characters more in detail ; first, because it is a necessary and common one to all first-comers in placer mines ; second, because, although it becomes effaced in time, it nevertheless lasts long enough to impress itself upon the earlier institutions of placer-mining countries when they come to be settled.

Placer mines when first discovered, and while the gold is easily found, commonly afford a profitable refuge to a class of men who cannot thrive elsewhere, to adventurers, outcasts, fugitives from justice, bullies, and felons. In their train follows a class of law and ordinance-breakers of the softer sex. However rapidly new additions to the community may improve its character, the influence of the first arrivals is bound to be felt for a long time. They are the older and the richer. The laws already established were framed in accordance with their habits, the customs already in vogue were moulded by their necessities, and their social peculiarities are perpetuated for generations. In other communities vice is lost in a mass of healthy surroundings ; in the early days of a placer-mining country there is so little sound environment that vice is paramount, and gives law and custom to the future community.

It is evident that placers rich enough to invite miners are not to be found in old or well-settled countries. The soil of these countries has been completely turned over by the plough,¹ and if there was ever gold enough in it to be worth searching for, it has long since been extracted. Gold placers are therefore only found in new and unexplored

discovery, consisted principally of acorns (Bryant, p. 147), were now fed with meat, sugar, coffee, flour and rice, and these they ate three times a day (Folsom, in Bryant, p. 468, and Mason, in Bryant, p. 456). These meals constituted the principal portion of the reward for their labour.

¹ "In Pæonia, the husbandmen while ploughing found pieces of gold." Strabo, vii. (Chrestom.), p. 331, as quoted in Boeckh, "Polit. Econ. Athen." Strangely enough, ploughing for gold has been systematically practised of late in some of the dry placers of California. The results, however, are unimportant.

countries, beyond the pale of civilization, beyond the domain of the agricultural pioneer, beyond even the outposts of the trader. Such countries are destitute of the means of subsistence to bodies of men in permanent settlements. There is no other protection for property and life than such as may arise out of the forbearance and justice of the assembled adventurers. There is no assistance to be obtained in case of sickness or accident; there are no women; there are no children.

To such a country, until it becomes better settled, few prudent persons would seriously think of emigrating. It follows as a necessary consequence that, at the outset, placer mines are occupied chiefly by the reckless and the desperate, few others being willing to encounter their dangers, inclemencies, and deprivations. This, as we shall find from the evidences open to us, often that of the men themselves, was the character of the Argonauts of California. It was likewise that of the first settlers in the gold-fields of Australia.

The first-comers at Sutter's mill were from the surrounding country, from Southern California, and from the Sandwich Islands. "The miners were by no means exclusively Americans. They consisted of every kindred and class. There were already some Indians, Mexicans from Sonora, Kanakas from the Sandwich Islands,¹ settlers from Oregon, mixed with the usual dash of Spanish, British, German, and French adventurers, that had for a long time existed in California. Later months were to bring other Mexicans, Chinese, Peruvians, and Chilians, and all these before the great impending immigration of Americans and Europeans."²

So much for the origin of the Californian Argonauts; as

¹ There has been such a drain from the Sandwich Islands, that there is scarcely a mechanic left at Honolulu. (Folsom, in Bryant, p. 468.) The Kanakas are tainted by an incurable disease, communicated by the British discoverers of the island in 1778. Since that date the native population has steadily declined from about 400,000 to about 63,000 at the present time. "Report of the United States Bureau of Statistics," Dec. 31, 1867, and "San Francisco Statistician," 1876, p. 15.

² Soulé, "Annals of San Francisco."

to their moral character we have it here painted by companions and lookers on. "Among the people engaged in the mines there are many runaway sailors, deserters from the army, trappers, and mountaineers, who are naturally idle, dissipated, and dissolute; in short, taken in the aggregate, the miners are the worst kind of labouring population."¹

"The miners who survive and return home may carry gold with them, but their morals and manners will have been ruined. The risk is too great for the reward." . . . "I can think of but few men whom I would advise to come to California."² "The mines had no sooner been discovered than crime commenced to increase."³ "Thefts, robberies, murder, and other outrages of the most desperate and criminal nature were taking place (in San Francisco) and there were no proper officials to take cognizance of them and bring the offenders to justice. Every man was intent on merely making money, and provided an outrage did not in a direct manner personally or pecuniarily affect himself, he was content to shut his eyes to the ultimate consequences."⁴

"Ever since the first great immigration many of the inhabitants carried some weapon of defence secretly about them. During the disturbed times in the early part of 1851, when nobody was safe from the assaults of desperadoes, even in the public street or in his own dwelling, the practice of wearing deadly weapons became still more common.

"These were often used, though not so much against the robber and assassin as upon the old friend and acquaintance, or the stranger, when drink and scandal, time and circumstance had converted them into supposed enemies.

"The number of duels and especially of sudden personal affrays was fearfully great. The general population of San Francisco, with shame it must be confessed, in those days

¹ Folsom, in Bryant, p. 474.

² Dr. Stillman, "Seeking the Golden Fleece," p. 146.

³ Hall, "Annals of San José," p. 194.

⁴ Soulé, November, 1851.

as is still (1855) the case, to a considerable extent drank largely of intoxicating liquors. Some scenes of a most savage and atrocious description, ending occasionally in death, took place between parties who were reputed to be of the first class of citizens. Among the lower American orders, and in all classes of foreigners, down to the vilest Greasers, the same violent spirit of personal revenge and deadly outrage was common.

“On the slightest occasion, at a look or touch, an oath, a single word of offence, the bowie knife leaped from its sheath, and the loaded revolver from the breast pocket or secret case, and death or severe wounds quickly closed the scene. The spectators often shared in the same wild feelings and did not always seek to interfere. The law was powerless to prevent such conflicts. Men thought as little of their blood and lives as of their money; and to gratify high swelling passions would madly waste them all alike.¹”

Of course there were exceptions to this general character, and these exceptions increased in number every year; but that these descriptions of society during the first few years of the placer settlements of California were truthful cannot be doubted. The better class of Californians, both native and settlers, stayed at home, stood by their fields and flocks, and thereby reaped surer and greater gains in the end.²

According to Mr. Newmarch the character of the first gold settlements in Australia was much superior to those of California.

“In Victoria,” says Mr. Newmarch, “as in New South Wales, there were, long prior to the events of 1851, all the

¹ Soulé, p. 364.

² When gold was discovered in 1848, one Louis Peralta, an old Spanish soldier and adventurer, upwards of one hundred years of age, said to his sons, who had attained the age of threescore: “You had better not go after it, but let the Americans go; you can go to your ranch and raise grain, and that will be your best gold-field, because we all must eat while we live.” Hall’s “Hist. of San José,” ed. San Francisco, p. 191, Bancroft, 1871. (San José was then the capital of the State.)

rudiments of an orderly and growing state. There was a powerful central authority, equal laws, perfect individual liberty, a population including wholesome proportions of the sexes, solid and respectable banking institutions, regular and frequent communications with the mother country, and a fair command of the species of capital necessary for the development of a new region."¹

This is strange language to hold in respect of a land which was settled only sixty years before by 650 men and 200 women belonging to a class of infamous criminals, whose former Governor was a despot armed with absolute power over the lives of the convicts, where famine was frequent, murder committed at any time for a few days' rations, and rum was money.²

If true, it can only be so in respect of the towns, and merely goes to show that in the course of sixty years assisted by a continual leavening of better colonists, even a convict settlement can be turned to some good account. That it is a correct description of the placer mining population of Australia is denied. When the gold diggings were discovered they were occupied by 9,000 ticket-of-leave men. "The records of crime show that the terrible outrages against life and property which were committed daily, both in town and country were almost exclusively the work of convicts."³ And it may be added that there is not a sinister lineament upon the social features of early California which is not traced in darker lines upon those of Australia.

¹ Tooke's "Hist. of Prices," vi. p. 802.

² "App. Encyc.," art. "Australia."

³ Ibid.

APPENDIX TO CHAPTER XXXV.

SOCIETY NEAR THE GOLD MINES.

THE following extracts will serve to illustrate the condition of society in the vicinity of newly discovered mines, the character of miners, the hardships and risks of mining, the cost of living near the mines, and the wear and tear of life.

“Kanakas, or Sandwich Islanders, the worst of labourers, are now employed constantly about town in storing and landing merchandise, at *four shillings an hour* each; and the most indifferent labourers are hired by the week together at six or eight dollars per day. Mechanics obtain, when employed by the day, £1 12s. or £2 per day, and by the month about £1 4s. . . . Washing £1 12s. per dozen. . . . Waiters at the hotel £240 to £300 per year; head waiter, £340. . . . For some time last summer (August and July) the officers at Monterey were entirely without servants, and the Governor (Col. Mason) actually took his turn in cooking for the mess. . . . Whole cargoes of goods are sold at an average of about 150 per cent. clear profit, and ready pay in gold dust. . . . (In a few months) real estate that cost me less than £160, I suppose I could now sell for £1,600 or perhaps £2,000. . . . Something should be done here at once for the establishment of peace and good order in the country. All law, both civil and military, is at an end. Among the mines, and indeed most parts of the country out of the villages, no authority but that of the strongest exists, and outrages of the most disgraceful nature are constantly occurring and the offenders go unpunished.”¹

¹ “Letter of Capt. Folsom to General Jessup, U.S.A.,” dated San Francisco, Oct. 8, 1848, in Bryant, p. 480.

Notwithstanding hardships and deprivations, many of the miners were unsuccessful even so early as 1849. San José was crowded with these men recruiting their purses by highway robbery, and seeking to drown remorse in drinking and gambling.¹

In 1849 and 1850 "the canopy of heaven was the only tent spread over the slumbering heads of thousands. Some sheltered by canvas, had sheetless, nay, blanketless beds, some no beds at all."²

At San José in 1850, flour, £10 a barrel; boots, £6 8s. a pair; eggs, 2s. each; onions, 1s. to 2s. each.³

At San José, 1850: "Crimes were numerous. It was not safe to travel at night without being armed. The country was so sparsely settled that it was difficult to catch criminals. Every few days some one was murdered in the valley."⁴

San Francisco, August, 1849: "Many who went to the mines returned unsuccessful, and report that the exertion of getting gold is too great."⁵

San Francisco, 1849: "Potatoes, 1s. 6d. a pound."⁵

Sacramento, October 13, 1849: "A meeting is called to-day for the relief of those on their way overland; they are said to be dying by hundreds from thirst and hunger upon the great desert."⁵

"Hundreds were coming in daily from over the mountains—sick, destitute, and almost starved. They met here with harpies to prey upon them, and they were often compelled to sell their teams for food enough to last them down to Sacramento city."⁶

"Quinine was in great demand at 4s. a grain."⁶ "For a shave at a barber's, 4s."⁷

"You have heard of the Battle of Life—it is a reality

¹ Hall, pp. 197 and 200.

² Ibid. p. 209.

³ Ibid.

⁴ Ibid. p. 235.

⁵ J. D. B. Stillman, "Seeking the Golden Fleece," pp. 120, 122, 123. San Francisco, 1877, Roman and Co.

⁶ Ibid. p. 131.

⁷ Ibid. p. 141.

here; the fallen are trampled into the mud and left to the tender mercies of the earth and sky. No longer ago than last night, I saw a man lying on the wet ground, unknown, unconscious, uncared for, and dying. To-day, some one with more humanity than the rest, will have a hole dug for him; some one else will furnish an old blanket; he will be rolled up and buried, and his friends at home, who may be as anxious about him as mine are about me, will never know his fate. Money, money, is the all-absorbing object.”¹

“There is no government, no law. Whatever depravity there is in a man’s heart now shows itself without fear and without restraint.”¹

“A young man died in the street to-day. No one knew him. In his pocket was an ounce of gold, a note-book, and a Bible, the latter of the smallest size, with gilt edges and tucks. In one place was a beautiful card, on which was written in a lady’s hand, ‘Remember your friend and ——.’ In another was a card, worked with worsted and mounted with silk ribbon, and the legend ‘A sister’s prayers go with you.’ Disappointment, drinking, gambling, and destitution was the story.”¹

“A pine-board building, ‘no better than a barn,’ 55 by 35 feet and $1\frac{1}{2}$ stories high, the interior partitioned with muslin, cost £3,000; it rented for £300 a month, or £3,600 a year. Wages of a cook, £50 a month.”²

“Butter, 6s. per pound; fare from Sacramento to San Francisco, £8.”²

Sacramento, January, 1850: “The people at home can have no conception of the amount of suffering in the vicinity of this city. Hundreds are encamped in tents through the rains and storms, scantily supplied with food and covering. *Many were driven from the mines for want of food*, and are begging for employment, asking only subsistence. Yesterday there were 25 deaths. The sickness does not arise

¹ Stillman, pp. 143 and 146.

² Ibid. p. 147.

from the severity of the climate, which is no colder (now) than November at home, but from a complication of causes. The intermittents of the autumn are aggravated by overwork, scanty and bad food, disappointment, and homesickness. Men in the ravings of delirium call upon friends who are far off, and, dying, mutter the names of their loved ones; men wasting away with chronic disease lose their manhood and weep often, like children, to see their mothers once more."¹

During the river flood of 1850, Dr. Stillman wrote that some men who had been taken into the hospital were "dying on the floor; others, dead, are sewed up in blankets and sunk in the water in a room on the first floor."²

"Gold washing is very hard work."³ . . . "I have been to the mines, was sick, made nothing, and returned."⁴

May 5, 1850: "My friend, Hiram Bingham, goes home by the next steamer. He was a member of our company. He has been leading the nomadic life of a miner, and has picked up about \$2,000, which he will carry home. That seems small compensation for all the dangers and hardships passed through and the time spent; yet it is better than the average."⁵

Speaking of an intelligent miner who, after years of blighted hopes and unrequited toil, was preparing to return home to his family, and died before he could do so, Dr. Stillman says: "I went to see his corpse, and, as I gazed upon him alone, I thought it was the saddest case I had ever known. No one of that fond family was here—no hand of affection to put back the locks that fell over that broad forehead."⁶

It is stated that so late as 1850, members of the legislature were paid in State scrip.⁷

January, 1851: "Crime continues to be rife in San José

¹ Stillman, p. 148.

² Ibid. p. 149.

³ Ibid. p. 157.

⁴ "Letter of a Yale College graduate," in Stillman, p. 159.

⁵ Stillman, p. 163.

⁶ Ibid. p. 170.

⁷ Hall, p. 244.

and vicinity. Scarcely a day passes without bringing something new to light.”¹

1852: The history of the first few years of this decade is blotted with crime throughout the State; and San José has not been fortunate enough to be excepted from the catalogue of criminal localities. Murder, highway robbery, and stealing were the *avocations* followed by no small number. The law permitted punishment by death, in the discretion of a jury, upon conviction of *grand larceny*.²

January 30, 1852: Theodore Basquez was executed for stealing a horse.²

November 18, 1852: Ramon Romero was executed for *grand larceny*.³

A licence for gambling cost £100 a month for each table.⁴

Miners, poor and broken in health, were continually entering the city for relief and medical attendance.⁵

“No city on this continent has equalled San Francisco in the prevalence of gambling, intemperance, licentiousness, and kindred evils. A decided improvement in public morals is said to have been made during the last year; but whoever, even now, takes a stroll through its streets, by night or by day, will be convinced that the unenviable reputation it has acquired is well deserved.”⁶

“Among the miners, except for the protection of life and property, the code of morals is generally a dead letter.”⁷

According to the Federal Census of California for 1850 the number of females to males at the ages of 20 to 40 is represented by the frightful proportion of 4 to 100. “Here then was a population composed almost wholly of male adults at those ages—20 to 40—when the energies and passions are most active, and almost wholly unrestrained by any of the duties claimed by infancy and old age, or by the respect due to the presence of women.”⁸

¹ Hall, p. 247.

² Ibid. p. 250.

³ Ibid. p. 252.

⁴ Ibid. p. 256.

⁵ Ibid. p. 266.

⁶ Capron's “Hist. Cal.,” 1854, p. 146.

⁷ Ibid. p. 233.

⁸ Tooke's “Hist. of Prices,” vi. p. 754.

“Success in mining for gold in California is subject to many contingencies, and mining, as a business, should be classed with very hazardous pursuits. A good prospect does not insure a good mine. Gold may be found there to a large amount, but it may also happen that after the miner, relying on the evidence given by his prospect, has toiled for months, and expended a large sum of money in making the necessary preparations to work his mine, he is doomed at last to irremediable disappointment, and perhaps is made penniless.”¹

“At Grass Valley and Nevada, the country around which has thus far been regarded as the most fruitful in gold, and where quartz-mining especially has been prosecuted more extensively than in any other section of California, several quartz mills are now useless, the mines having failed for a long time to yield a paying supply of gold. One of these mills at Nevada cost £2,000, and several others £600 to £1,000. All these quartz mines opened richly, and for many months were very productive; but at length the supply decreased, until the product did not pay the expense of mining. . . . The same may be said of other parts of the gold region. Scarcely a district can be mentioned, where mines have been opened to any considerable extent, in which miners have not been ruined by the erection of expensive mills, canals, flumes, or other fixtures for mining, in leads and places which promised well at first, but which, too soon, disappointed their expectations.”²

¹ Capron, p. 237.

² Ibid. p. 238.

CHAPTER XXXVI.

LABOUR, DIET, AND PRIVATION AT THE MINES.

Influence of labour and diet upon society—Work and fare in the Californian and Australian placers—Inclemency of the seasons—Exposure to extremes of heat, cold, and damp—Severity of the labour—Scarcity and dearness of food—Cheapness of gold—Living on grass and acorns—Absence of comforts—Character of the miners—Insecurity of life and property—The miners' usual luck.

WITHOUT assenting to all of the inductions presented by Mr. Buckle in his "History of Civilization," that one may be safely accepted which asserts that the nature of the occupations in which a community may be engaged, and the diet and other physical circumstances to which it is exposed, have much to do with the character of the institutions whose establishment may follow. Of this rule we shall find that mining communities offer a peculiar and further exemplification.

The labour of the Californian placers was intense and unremitting. The glare of gold was constantly in the men's eyes, blinding them to the frightful bodily and mental risks they ran, and to the many forms of death that lurked behind them. They worked all day and often at night, exposed at times to the scorching rays of a mid-day sun, and at others to the destructive chills of damp nights. Stimulants and medicines, purchased at extravagant prices, were employed to ward off disease and death; while shelter, repose, and moderate labour, the only true palliatives for the ills that beset them, were shunned, because they interfered with gold-getting. "The day was intensely hot, yet about 200 men were at work in the full glare of the sun, washing for gold—some with tin-pans, some with close

woven Indian baskets; but the greater part had a rude machine known as the cradle.”¹ “Recently there has been a reaction, which brings many back from the mines and an active immigration is flowing from abroad. Sick-ness has broken out among the miners, and many have returned prostrated with fevers, while others have come back to avoid being so. . . . Flour and pork vary in the mines from £8 to £40 per barrel I saw a box of Seidlitz-powders, worth 2s. in San Francisco, sold in the mines for £4 16s. grain gold; and was credibly informed that brandy had been sold at £9 12s. per bottle I was in the mines about the 1st of July. At that time the weather was insufferably hot. I think it by far the most oppressive climate I ever was in. It is much more uncomfortable than the climate of Brazil at the warmest season of the year, and everything was literally parched-up, after a drought which had then continued for near three months, and which had five months to run to the rainy season. The sea breezes which extend up the valley of the Sacramento never pass the Sierra Nevada, and seldom penetrate even the lateral valleys and ravines of those mountains; and there was not a breath of air moving among the mines. The sun was blazing down with more than tropical fervour, while his rays were reflected in ten thousand directions from the sides of the hills until the atmosphere glowed and glimmered like the air in a furnace. I then foresaw (what has since happened) that there would be much sickness among the miners. These people had deserted their regular occupation, and a complete change of life and an unnatural climate could not fail to act unfavourably upon their health. Their diet was bad, their labours were severe, and they were exposed completely without shelter, in the daytime to a burning sun, and at night to the chilly atmosphere of the mountains. Many of them worked with their feet in the water and inflamed their blood in a feverish climate by a free use of ardent spirits. The natural consequences

¹ Col. Mason, Aug. 1848, Bryant, p. 456.

followed. Many are now sick with bilious and intermittent fevers, dysenteries, camp-fevers, &c.”¹ “All live in tents, in bush arbours, or in the open air.”²

“During the year commencing July 1st, 1848, there will be £1,100,000 removed from the mines It is sufficiently obvious that the country will be prematurely filled by a restless, excitable, adventurous, and reckless population, and that extended agricultural or mechanical improvements are at an end for some years to come. Gambling and all sorts of thoughtless profusion begin to prevail. The present excitement will attract vast numbers of the idle, vicious, and dissolute. Refugees from justice from the United States as well as other countries will flock to California among the better disposed population, and will find shelter among the almost inaccessible fastnesses of the mountains where such mines of wealth are now opened. These regions are of vast extent and are remote from the regular settlements, and from the operation of the laws. In the solitary recesses of the Sierra Nevada are little clusters of men, with nothing but the trees for their covering, and no protection but their own vigilance and strength. Many of these people are known to possess very large amounts of gold (sometimes as much as £4,000) wrapped in their blankets, where there is no eye to see and no agent to pursue the guilty. Is it strange when the temptation is so great, that the robber and assassin should be abroad among the mountains? Many robberies and some murders are known already to have occurred; but little attention is excited by these events where all are in the eager pursuit of wealth. No one can conjecture the extent of these outrages; for living witnesses are not at hand, and dead men tell no tales. . . .”³ “Besides living like

¹ Captain Folsom, Sept. 1848, Bryant, p. 468.

² Col. Mason, August 17, 1848.

³ Letter of J. L. Folsom, Captain and Assistant-Quartermaster to Major-General Thos. S. Jessup, Quartermaster-General, U.S.A., dated San Francisco, Sept. 18, 1848, and printed in Bryant's "What I saw in California," p. 468.

wild animals, they slept on the bare damp ground exposed to the dews of heaven and the violence of man, a sickly nervous sleep that brought little rest. Some reposed in arbours composed of tree branches; a few in canvas tents. They sold their gold at 16s. an ounce, and bought bread and potatoes at from 1s. to 4s. per pound and meat at double these prices. Besides these articles, few others were to be had at any rate. They lived in fear of each other, buried their gold in secret holes, and robbed and assassinated one another right and left. Most of them succumbed to violence or fever; a few got away with sums which, as a rule almost without exception, they soon lost in gambling or debauchery; not one of them acquired a permanent fortune.”¹

“In May, 1849, 20,000 men broke camp on the Missouri river to march to the land of gold.”² “We had provisions for a year; as there was then no stock in the mines.”³ “In the midst of our rejoicings (upon reaching the new placers) we ran out of provisions and had to live for days on grass and acorns, picked from the holes in trees where they had been placed by woodpeckers.”⁴ “It was customary to sell the gold (dust) at 16s. per ounce, which was intrinsically worth over £3 4s.”⁵ “California gold averaged 89.58 per cent. pure.”⁶ “No man would give another a hand’s turn for less than £1; while a day’s constant labour of the commonest kind, if it could have been procured at all, would cost from £4 to £6 at least.”⁷

“In San Francisco in 1849, 4s. was paid for a pill, and the same sum for an egg; £20 for a pair of boots, and twice that sum for a decent suit of clothes; a single rough brick cost fivepence, and a plank some twenty feet long was cheap at £2. At one period of that wondrous year, common iron tacks of the smallest size sold for their

¹ Folsom in Bryant.

³ Ibid.

⁵ Hall, p. 193.

⁷ Soule’s “Annals of San Francisco.”

² Hittell, xiii.

⁴ Ibid. xiv.

⁶ Capron, p. 222.

weight in gold; and for a long period were in request at from £1 to £2 an ounce. . . . In June, 1849, prices were: eggs, 4s., 8s., and even 12s. each; sugar, tea, and coffee each 16s. per pound; laudanum, 4s. per drop, £8 per dose; pills, £2 per dose; spirits, £2 to £8 per quart; wines, £2 to £8 per bottle . . . As for beef, little of it was to be had, and then only jerked, at correspondingly high prices.”¹

Similar details are narrated of Australia during the first few years that followed the discovery of the placer mines in that country.

“In the spring of 1854 there was discovered in Australia one of the richest placers or gold beds, even of that auriferous country. The spot was a deep ravine formed by the Buckland river, enclosed by steep mountain sides, which excluded every breath of wind. It was autumn in Australia, though spring here (in England). The air in the ravine was stagnant, and the scorching sun made it intensely hot during the day; while at night the temperature fell to a piercing cold, so that the sojourners in the ravine were alternately in an oven and an ice-house. Moreover, as the gold beds lay in the channel of the river, the miners worked up to their waists in water.

“To this gold field of surpassing richness hundreds of adventurers flocked in feverish haste; but disease, like the fabled dragons and griffins of old, kept horrid sentry over the buried treasures. A peculiar fever of the typhoid character was the natural denizen of the spot; besides which the gold-seekers suffered severely from eye-blight, owing to the concentrated blaze of the sunshine reflected from the steep sides of the ravine; and they were at all times grievously tormented by clouds of flies. Bad diet and want of vegetables aggravated the diseases natural to the place and to the kind of work. In the strangely interesting accounts which then reached us, we read of onions selling at six shillings a pound; and cabbages, which we buy here for a penny, were so precious that they were cut up

¹ Soulé's “Annals of San Francisco.”

and sold by weight, from half-a-crown to four shillings the pound being readily paid for them. Physic, or what passed for it, rose in price in a still more startling manner; Holloway's pills selling at a shilling each or a guinea per box. It was a valley of death! Constitutions that had borne the hardships of other fields broke down here, wrote an eye-witness of the scene, and hundreds have perished, dying unattended and unknown. The little levels between the stream and the base of the mountain-wall, for ten miles along the valley, are so thickly studded with graves, *that the river appears to run through a churchyard.*

"One new-comer, wiser than the rest, having counted eleven corpses carried past his tent during the dinner hour of his first working day, and thinking that even gold may be purchased too dearly, left the place instantly. Many abandoned it after a somewhat longer trial; but the greater number, fascinated by the unusual richness of the gold-beds, remained, in defiance of disease, and took their chance, with what result the numerous graves of the valley testify to this day."¹

The low price of gold dust in coin, so peculiar a feature of early Californian experience, is noticeable in that of Australia.

An ounce troy of fine gold was and is still coined by the British Government into 1019·45 pence, or 84·9541 shillings, which is the mint price in London. In 1851 the Australian miners were obliged to sell their dust at probably not over one-half its value. In 1852 they sold it at prices varying from 58 to 68 shillings per ounce; in 1853 from 70 to 76 shillings, and in the three following years from 75 to 77 shillings.²

These low prices of gold dust were due to the scarcity of coins, particularly the minor ones. The writer has now in his possession some rude lumps of silver stamped with crosses, which passed in the early days of California for

¹ Patterson's "Econ. of Cal.," London, 1865.

² Tooke's "Hist. of Prices," vi. p. 843.

25 cents each, their value in bullion not exceeding 10 cents. He has also been credibly informed by more than one of the original "pioneers," that at one time gold dust was exchanged by the miners for silver dollars, weight for weight.

The insecurity of property at the mines is another noticeable feature of early Californian life.

"The miner having obtained the gold, is next chiefly concerned for its safety. He is far up in the mountains and forests, surrounded by roving robbers and thievish lurking Indians, and in his frail shanty, constructed of boards or cloth, has no stone vaults or iron safe in which to secure his treasure. It is too heavy to be carried about his person; and if he secretes it in some hollow tree or peculiar rock, or secret cave, or crevice, the hiding-place may be discovered by the marauders who may chance to discover his visits to the spot. Under these circumstances he resorts to various expedients to secure his gold. Perhaps he digs a small pit under the stones on which he builds his fire, or under the bunk on which he sleeps."¹

"When these things (the high prices of labour, food, medicines, &c.) and the risks of sickness, the discomforts of living and the unusual and severe kind of labour, are all balanced against the average gains, it may appear that after all the miners (were they ever so fortunate) were only enough paid."²

"The expenses, the time spent in travelling and prospecting, and lack of all the luxuries and many of the comforts of life, made many of us think it was cheaper to get gold in any other way than by digging for it in the placers. We abandoned the mines. Our bright dreams of becoming millionaires by washing the sands of the Sierra Nevada were all dissipated."³

"September, 1849. A short experience of the mines had satisfied most of the citizens of San Francisco that, in vulgar parlance, all was not gold that glittered.

¹ Capron's "Hist. Cal.," p. 220.

² Soulé.

³ Hittell, xiv.

“ With a few, the dream has been realized ; and although in the aggregate vast sums of gold have been obtained, yet a large proportion of the miners have learned the, to them, sad lesson, that man in any country, to be truly happy, must earn his living by the sweat of his brow. Through much exposure and suffering, wearied and heart-broken, the poor miner has not unfrequently turned from the scene of his brilliant hopes to spend his last hours among his early friends—a sadder but a wiser man.”¹

“ One . . . employed nearly 150 Indians to dig gold for him : at one time he had nearly £ 400,000 buried in the ground. But like all other miners, he lost it all.”²

¹ “ Early Days of California,” by J. G. Farnham, Philad. Potter, 1860, p. 300.

² Hall, pp. 192-3.

CHAPTER XXXVII.

THE GAMBLING CHARACTER OF MINING.

Lord Bacon on the uncertainty of mining—Its unprofitable nature—Its character of a lottery—Antiquity and popularity of lotteries in the face of constant loss and interdiction—Extent of lottery gambling—It exceeds the value of the gold and silver product—Unprofitableness of mining difficult to perceive—Fascinating character of the pursuit—Opinions of eminent authors as to its gambling character—Men enriched by mining usually die poor, a fact due to the difficulty of renouncing the gambling habit which enriched them—Violent fluctuations of mining stocks—Unprofitableness of mining known to the ancients—Not to the modern world because of its limited experience in free mining—The cost of mining not ascertainable from the experience of the mediæval ages.

M OIL not too much underground, for the hope of mines is very uncertain," said one of the wisest of men, in whose time mining meant chiefly for gold and silver.¹ Few, perhaps, who have read this opinion are aware how shrewd a one it is, and even men who have been the witnesses and subjects of the uncertainty of mining, have shut their eyes to the plain evidence before them, and retained faith in a metaphysical doctrine which has no foundation in fact. One writer, originally a Californian miner, advances as a reason for his faith in the generally accepted theory of value, the inconceivability of the continuance of mining were it not profitable.²

¹ Lord Bacon's essays, "Of Plantations." See, also, Sinclair's "Hist. Rev.," iii. app. 10.

² "The statement has been made" (in the Californian newspapers and by practical miners, and mining superintendents) "that the gold produced in California cost more than it was worth. That gold mining was profitable to the miners is shown by the fact that the business has been maintained now for nearly twenty-five years." Hittell's "Resources of California," p. 298.

The same may be said of the purchase of lottery tickets. This occupation has been systematically pursued ever since the Lotto was established at Florence in 1530.¹ In England lotteries were brought from Holland in the XIth Elizabeth. According to Raynal two American companies were favoured with the first lottery that ever was drawn in her dominions.² Lotteries as a regular source of government revenue were established in England about 1620, and for nearly two centuries contributed to swell the revenues of the crown.³ They can be traced back to the mode of distributing, and the practice of purchasing the ancient Roman *congiari*, and may even have had an earlier and more distinct origin.

From 1816 to 1828 the French government derived from lotteries an annual income of 14,000,000 francs.⁴

At the present day, in spite of prohibition and penal laws, and of increased intelligence and morality, lottery tickets are sold in every large city in the United States. The "business" is as permanent and well-established as any other.

A person of the shallowest intelligence may easily become convinced of the fact that on the average the purchaser must lose, and the seller gain, in a lottery: and yet this institution continues.

In the city of New York nearly all, if not quite all, of the adult negro population (who number many thousands), besides a very large number of whites of the lower orders, are systematic lottery gamblers, purchasing their tickets every day, and generally both morning and afternoon; there being four lotteries daily in certain of the Western and Southern States, whose drawings are sent to the metropolis by telegraph. Such of the better classes as purchase lottery tickets --and many of these are stockbrokers and jobbers

¹ Established in France, 1539.

² Sinclair's "Hist. British Revenue," i. 419 and iii. appendix 37.

³ D'Avenant's Works, *passim*.

⁴ "Appleton's Encyc.," x. p. 664.

who are capable of calculating the chances of the game with great exactness—deal in the tickets of the Havana lottery, whose drawings are sent by the Cuba cable and published in the New York newspapers. Some of the “Exchange” offices in Wall Street are engaged in selling lottery tickets, the display of coins in the window being merely a blind. The sale of cigars and other articles are used as blinds in the commercial portions of the city. In the dwelling portions a shop or booth with the word “Exchange” in the window, or merely a shabby curtain, or a screen inside the door, denotes the lottery office.

There are stated to be upwards of a thousand such places in New York. They are scarcely less numerous as proportioned to population in other American cities. In New Orleans the tickets are openly displayed (or were a few years ago when the writer visited that city) in the cigar and other shop windows. The sums of money invested from time to time in this manner, where it may be assuredly known beforehand that the whole number of purchasers, or the average purchaser *must* lose, probably amounts to more than the entire product of the gold and silver-mines of the United States. Yet “the business has been maintained” in this country, not like the gold production, during a brief twenty-five years, but during two hundred years, for we hear of its being denounced in Boston so early as 1699.¹

If it be asked why a practice so evidently unprofitable as lottery gambling is continued in the face both of prudence and interdiction, the answer is that although evidently unprofitable it is not generally speaking obviously so. The mass of those who gamble are incapable of justly estimating the chances of the game, or are destitute of that force of character which is necessary to enable them to eschew so hazardous a pursuit.

It is the same with free mining for the precious metals.

¹ “Appleton’s Encyc.,” x. p. 665.

Apart from the free pioneer, apart from the hired miner who mechanically works with pick and shovel for a day's pay, and would work as steadily in a coal mine or on a farm, and apart from those stipendiaries connected with mines, such as superintendents, officials, &c., these classes together comprising but a small portion of those who have contributed to stock the world with gold and silver, the miners, that is to say the mine hunter, the mine promoter, and the mining speculator, is essentially a gambler.¹

If husbandmen invariably obtained three bad harvests before one good one, they might nevertheless sow the fourth time, because one good harvest might cover even this great deficiency. But it certainly would not cover any more; and an invariable succession of four bad harvests before one good one would put an end to agriculture. Not so with mining for the precious metals. Were ninety-nine-hundredths instead of four-fifths (which is the fact) of all mining adventures unprofitable, still would there be found a class of men willing to hazard the hundredth one, in the hope that that one *might* prove profitable.

The uncertainty and uncertain profits of free mining extend the calculation of its cost over long periods of time,

¹ Says J. R. MacCulloch. in the "Encyclopædia Britannica," article "Money:"—

"Frequently indeed, the production of the precious metals partakes very largely of the nature of a gambling speculation. . . . Ulloa says that in Peru an individual who embarked in a mining speculation used to be considered as a *ruined man*, or as having adventured *in a lottery*, in which, though there are many great prizes, the blanks had a decided preponderance; and, according to Humboldt, the same thing was experienced in Mexico, the search after mines, and the working of them, being there looked upon as a sort of *gambling adventure*, in which many are ruined, while a few only attain great wealth."

The facts quoted by MacCulloch will be found in Adam Smith's "Wealth of Nations," book i. chap. xi. part ii. In view of the vast influence which Dr. Smith's work has exercised upon the welfare of mankind, it is to be profoundly regretted that in this important respect the suggestions contained in the materials before him were turned to such poor account as is to be found in his doctrine of value.

and many countries ; until it eludes the grasp of the mass of men. This cost is not obvious ; it has never been demonstrated by evidence. It is, at the most, suspected by a few persons who have enjoyed unusual opportunities for observation and reflection upon the subject.

Another reason why men continue to pursue gold and silver mining is closely allied to the one above given. That one was its unproved character of unprofitableness ; the present one is its uncertainty, and occasional vast profits which liken it to a lottery. One may have reason to doubt that in the long run gold and silver mining is unprofitable, but he has none to doubt that it is risky. And just as there are multitudes of persons who, knowing beforehand the unprofitableness of systematically purchasing lottery tickets, nevertheless continue to do so all their lives, so are there multitudes with even more excuse for their rashness, who are always ready to follow the fascinating pursuit of gold and silver mining.

The secret of this fascination is in the gambling nature of the industry. Every step in mining, from discovery to production, is attended with risks of the most violent character, which are wholly impossible to foresee. One has only to examine the fluctuations in the prices of mining stocks in the San Francisco or Sydney markets to be convinced of this fact. These prices are not quoted, as were those of railway stocks in New York during the war, in a credit money whose mass was more than once suddenly augmented, but in gold coin, the fluctuations in the value of which at the present time are not nearly so great.

The general rule of experience that mine owners, mine discoverers, and mine explorers, rarely or never retain the wealth which exceptional good fortune sometimes bestows upon them, is not without its significance in this connection. These men were successful because they were gamblers, and the habit of gambling, which once acquired is difficult to throw off, is the cause of their so commonly losing what they may have gained.

It might be urged still further that although the class of individuals engaged in mining for the precious metals may commonly fail to perceive its unprofitable nature; that although perceiving it they may still be led to pursue the industry on account of its promises of vast wealth to the successful; yet that the rest of society can hardly be supposed to share their imperfect observation or judgment.

Conceding that precise data were wanting, and that the historical evidence as yet not segregated from the mass of other events was tediously diffuse and difficult to sift, yet a truth so important must, despite these obstacles, have floated in some shape or another to the surface, and made some mark upon the legislation, the government, or at least the philosophy of the times.

We shall have reason in another part of this work to fully verify this suspicion. It is no new discovery that mining for the precious metals is both pecuniarily and in other respects an unprofitable industry. The ancients seem to have been very well aware of it, and at many periods and in many countries its pursuit has been entirely forbidden.¹

As to the absence of any modern recognition of the unprofitableness of gold and silver mining, we Europeans of this brilliant and eventful century are too apt to forget our very recent emergence from the ignorance, the violence, and the servile condition of the mediæval ages. It is scarcely a century since the occurrence of the American and French revolutions, and, speaking as Europeans, not a century since the enfranchisement of our industrial classes from serfdom.

We have scarcely yet become accustomed to the word Liberty, or to know its deep significance; yet here we find ourselves wondering why we have not already penetrated the inmost arcana of a polity to which only the light of a long-continued civilization had led the ancient world.

Although neither the unprofitableness nor the gambling

¹ See chapter xxxix. of the present work.

character and the immoral tendency of gold and silver mining have as yet found specific recognition in modern legislation, there is not wanting a significance in the absence of popular regret with which many of the European and American States have parted (perhaps for ever) with their stocks of the precious metals.

In many of these countries systems of money composed of government numeraries have supplanted the use of gold and silver coins, although in none of them have the latter as yet been prohibited. These coins therefore remain legal tender, generally, as before, and thus offer that same immediate market for the sale of these metals, which has always formed the principal incentive to their reckless production.

Any commercial conclusions concerning the cost of the precious metals which are derivable from the course of recent national legislation on the subject are therefore premature. We can gain no light even from the aggregate wisdom of society, until the experience which must furnish its basis has become more matured.

Between ancient and modern legislation there intervenes not the legislation, but rather the government of mediæval countries. As it is from these countries and this period that much of our stock of the precious metals is derived, it remains for us to inquire why society, during the entire period from the subversion of European liberty by the Roman conquerors to its general restoration after the French Revolution, failed to discern the unprofitable character, and to avoid the unprofitable pursuit, of mining.

The answer to this question comes in a word. Society was not free, and whether it perceived the unprofitableness of mining or not, it was powerless to avoid its pursuit. The condition of all Europe and America, except that of the ruling classes, was one of servility. Under the military power and the form of feudal obligations men were forced into the mines until they perished in them. Political economy had nothing to do with this period; commercial calculations were impossible and futile. It was an era of

Force, in which on the one side were ranged a few nobles clad in armour, girt with steel swords, and protected by castles, ramparts, and ditches; and on the other a multitude of unarmed and half-naked peasants, incapable of resistance.

CHAPTER XXXVIII.

MINING AS A PROMOTER OF INSANITY AND CRIME.

Moral influences of mining—Their extent and character—The stock market of San Francisco—Deceptions practised—Inveiglement of the credulous and industrial classes—Devices of the stock-jockey and black-leg—Demoralizing results—The fascination of mine gambling—Despair and crime—Insanity statistics of France, the United States, and California—Insanity twice as rife in California as in the United States generally, and more than twice and a-half as rife as in France—Suicides—Their frequency in San Francisco—Twice as common as in New York, and three times as common as in Philadelphia—Their origin clearly traceable to the hazards of mining.

ONLY those who have lived in gold and silver mining countries can fully understand the powerful influence which this hazardous industry exercises upon the moral welfare of the surrounding community. The almost universal passion for gambling which it excites and encourages; the extraordinary freaks of fortune which it gives rise to, where sometimes, and in the course of a few months, the most indigent and illiterate of the community are lifted into opulence and power, while the well-to-do and intelligent are reduced to unexpected poverty and obscurity; the licentiousness of the *nouveau riche*, and the grief and despair of the unlucky and disappointed—all these are social features peculiar to mining countries, whose broad and deep marks to be appreciated must be seen with the observer's own eyes.

A continuous residence of more than two years in California has satisfied the writer that, at least in San Francisco, which contains one-third of the entire population of the State, there are few persons of an adult age who are

not at some time or other directly interested in the mines ; and this is probably also largely the case throughout the State generally, and also throughout Nevada and the remaining portions of the North Pacific slope. The miners themselves, who, now that the placers are exhausted, are, for the most part, working-men upon daily wages, are probably the least interested of any class in the vicissitudes of the mines. But down to the very boot-blacks and servant-girls there are few others of whom the same can be said. When a new ore discovery is made, or is expected to be made—and this occurs not unfrequently—every kind of productive labour is abandoned for the superior attraction of the Stock Exchange and the broker's office. At these centres of activity can be seen any day thousands of men and women, the latter chiefly of the poorer classes, tradeswomen and domestic servants, waiting for that turn of the wheel of fortune which shall bring them opulence and ease. Little hoards are withdrawn from savings banks and other receptacles, and eagerly exchanged for shares in looked-for bonanzas, and when the prices of the latter advance so as to place them beyond the reach of the purchaser with limited means, the shares of other properties, often so obviously worthless as to be openly and generally alluded to as "wild-cats," are purchased with the same eagerness, and paid for in coin wrung from the sweat of labour and subservience.

Upon the passion thus roused and the credulity which it fosters, there are not wanting classes to prey and thrive. False or exaggerated reports of ore discoveries, delusive tricks and plants in and about the mines, stock deals and jobs concocted to deceive investors, wash-sales and bull-and-bear movements on the stock-market, the employment of stool-pigeons, point-givers, and cappers—in short all the devices known to the jockey and the blackleg are brought into active play. The common result is loss and despair to the deluded investor and fortune to the conspirator ; and yet the few prizes snatched from the fire are so fascinating, that no degree of general loss appears to be sufficient to

deter new aspirants for fortune. There is scarcely a class of the community which does not play some part in this drama. The conservative merchant or banker who lends money upon this or that mining stock, or withdraws the often designedly accorded credit; the influential leader of fashion who confidentially imparts the exclusive intelligence concerning some mine to his or her circle of dearest friends, which, in most cases, is certain to ruin them; the fiduciary who borrows from his trust-fund merely for a few days, until he can realize the enormous profit promised by an impending rise in stocks and pay back the dishonestly abstracted money; the clerk who is tempted to seek fortune through the humbler medium of his master's till; the poor shop-girl whose virtue falls an easy prey to the powerful allurements of wealth and who is then employed as the medium for trapping other victims—all these and many other classes are lost in the dangerous and demoralizing pursuit of sudden wealth from the mines.

At the present writing there are four exchanges in San Francisco, all of them devoted exclusively to mining stocks.¹ So small a quantity as five shares of stock is commonly dealt in, and cases are known where a single share, nay one-half of a share, was bought and sold. The prices of the stocks have ranged from several hundred dollars down to two cents a share, so that the smallest speculator can be accommodated.

So universal has stock gambling become in California, that mining stocks take the place of the weather in other countries, and have become the commonest theme of conversation, alike in the politest circles and the obscurest retreats. Indeed, one can learn after a brief residence on the coast, and merely by observing the faces and demeanour of those who throng the neighbourhood of the exchanges, whether the "market" is up or down.

That in a community thus engaged and constituted—and the same may be said of the mine-owning towns of Mexico and Australia—insanity and crime should prevail to an

¹ These are the San Francisco, the Pacific, the California, and the People's.

unusual extent is only what would naturally be expected. The intellect is not proof against the sudden changes of fortune induced by the hazard of gold and silver mines, and the sudden and tremendous fluctuations in their value ; nor are the passions subject to the same control that distinguish them in communities occupied in safer and more sober pursuits. The evidences of these aberrations of mind, this violence of emotion which distinguishes mining countries, are to be found in every direction. It will suffice for the purposes of this work if two of the principal ones are selected for illustration. These are insanity and suicides.

In arranging the evidence of insanity it is primarily necessary to distinguish between this mental derangement and idiocy, the former being "the product of society and of moral and intellectual causes," and the latter "a state depending on soil and material influences." Next, an allowance must be made for the number of insane in private families or at large, and not confined in the asylums. According to the voluminous, though far from critical report of Dr. Wilkins to the Governor of California, France is the only country whose statistics, as quoted, distinguish the insane and idiotic severally, in asylums and at home. The year selected for illustration, 1861, happens to be that one when the official figures were, for the first time, substantially correct. Of this we are assured by the "*Statistique de la France*" [par Maurice Block, Paris, 1875, volume i. p. 308], the same work on a previous page giving the number of insane under treatment in France at various recent periods as follows:—

Year.	In Asylums.	At Home.	Together.	Population of France.	Insane to population, 1 in
1851	21,353	24,433	45,786	35,783,170	781
1856	25,485	34,004	59,499	36,139,364	607
1861	30,239	53,160	83,399	36,717,254	440

The increase of insanity apparently shown here is due for the most part to the increased completeness of the returns, evidenced by the augmenting proportion of insane treated at home. This, at the latest date, was 175 to 100 in asylums.

The statistics of insanity in the United States are obtained for the Federal census from the reports of the asylums. They are somewhat defective as to numbers in private asylums, and do not make any allowance for the numbers treated at home. With an estimate of the latter based on the proportions exhibited in France, the statistics of the United States are as follows:—

Year.	Whites in Asylums.	Estimated at Home.	Together.	White Population.	Insane to population, 1 in
1850	14,257	24,950	39,207	19,553,068	498
1860	23,593	41,288	64,881	27,461,813	423
1870	35,610	62,318	97,928	33,589,377	343

The estimates in the second, third, and fourth columns for 1860 include free coloured persons who are not distinguished from the whites in the census compendium of that year. The proportion of free coloured is little more than $1\frac{1}{2}$ per cent. All of the above numbers include California.

The black, formerly the slave population of the United States, is omitted, because, while idiocy is quite common with this race, insanity is rare, and their incorporation into the table would render it misleading.

Here, again, the numbers and proportions exhibit increase since 1850, and show that in the United States generally, insanity is half again as prevalent at the present time as it was twenty or more years ago.

Let us now see how the case stands in California, considered by itself. In that State there are no private asylums. The official returns of insane at Stockton and Napa include

a few idiots—according to the Federal census of 1870, only 14 per cent. of the whole number—and to that extent the comparison which will presently be made is vitiated, certainly for one year, and probably, to more or less than this extent, for all years:—

At close of official year.	In asylums at Stockton and Napa.	Estimated at home. Proportion as in France.	Together.	Population of State.	Insane to population, 1 in
1850	22	38	60	165,000	2,750
1860	417	730	1,147	379,994	331
1866	693	1,213	1,906	476,409	250
1867	769	1,346	2,115	500,039	236
1868	853	1,493	2,346	518,000	221
1869	920	1,610	2,530	538,000	213
1870	1,047	1,832	2,879	560,247	195
1871	1,090	1,908	2,998	582,400	194
1872	1,123	1,965	3,088	605,700	196
1873	1,156	2,023	3,179	630,000	198
1874	1,224	2,142	3,366	655,200	195
1875	1,302	2,279	3,581	681,400	190
1876	1,422	2,489	3,911	708,700	181
1877	1,590	2,783	4,373	737,000	168

These numbers include white and other races ; but as the latter form only a small proportion (ten per cent., mainly Chinese) of the whole population of the State, it has not been deemed worth while to exhibit their statistics of insanity separately. The proportion of Chinese insane is less than five per cent. of the whole number.

The uncertain factor in this table is the proportion of insane not in the two asylums at Stockton and Napa. The proportion estimated is derived from the statistics of France, where wealth being less equally distributed, and the police more scrutinizing, it is to be presumed that this proportion, great as it is, is less than in California.

As these statistics do not show the number of new persons afflicted each year, but only show the whole number

remaining afflicted at the close thereof, and as the populations of France, the United States and California respectively, are of different ages, there is other room for errors when the table is used for the purpose of international comparisons. But these uncertainties and discrepancies are not important in the present connection.

Unmodified by these considerations, it appears that among the white race in France insanity is the condition of 1 in 440 of the population; in the United States, generally, 1 in 343; in California, by itself, 1 in 168. In other words, insanity appears to be twice as rife in California as in the United States, and more than twice and a-half as rife as in France.

The number of new commitments for insanity each year since 1866 may serve, in some measure, to indicate the causes of this extraordinary and sorrowful exhibit:—

Fiscal year ended June 30.	Commitments to Stockton and Napa Asylums.	Population of the State.	Annual commitments to population, 1 in
1866	279	476,409	1,707
1867	313	500,039	1,597
1868	387	518,000	1,328
1869	482	538,000	1,116
1870	562	560,247	997
1871	523	582,400	1,112
1872	506	605,700	1,197
1873	401 ¹	630,000	1,177
1874	524	655,200	1,250
1875	615	681,400	1,108
1876	735	708,700	964
1877	652	737,000	1,130

From 1848 to 1865, inclusive, a period of eighteen years, the whole number of commitments to the State Asylums for the insane was 3,169, or an average of 176 per annum, while from 1866 to 1877, inclusive, a period of twelve

¹ Nine months to June 30.

years, the commitments have been 5,979, or an average of 498 per annum.

The former may be regarded as the era of the placers, when few besides those who worked in or about the mines were subject to their vicissitudes, and when death soon closed the career of the unfortunate adventurer, and shielded him from the milder visitation of insanity. The latter is the era of the vein-mines, of mining incorporations, and of gambling made easy by mining shares and stock markets. It is not difficult to infer that these causes have had much to do with the great increase of insanity shown by the statistics adduced; an inference that becomes greatly strengthened upon turning to the statistics of suicides in San Francisco.

These statistics, it must be remarked, are very defective. Until lately, no attempt had been made at the coroner's office to construct tables of suicides comparing one year with another; and nothing beyond the most indifferent effort was made to ascertain their causes. Much improvement in these respects has lately taken place, but still many suicides are not reported. These consist mainly of persons who drown themselves in the bay, and whose bodies are not recovered and brought under the notice of the coroner; and of Chinese, the deaths of whom in San Francisco from whatever cause, are reported as due to "unknown" causes.¹

Another class of omissions is of persons belonging to the city who may have committed suicide beyond its corporate limits. In such cases the coroner of the city has no supervision and makes no mention of them. Some of these, not all, are included in the reports of the health officer.

From the records of these two officials, and, when they

¹ Report of the coroner for 1878, p. 5. The Chinese in San Francisco number about one-tenth of the population, and although they nearly all consist of adult males in the prime of life, while the whites consist of both sexes and all ages, the whole number of Chinese deaths is in about the same proportion.

disagree, choosing the higher number as the more nearly correct, we have the following comparative results :—

Reported Numbers of Suicides in San Francisco.

Year. ¹	Suicides.	Year. ¹	Suicides.	Year. ¹	Suicides.
1860	31	1867	29	1873	38
1861	30 ²	1868	28	1874	61
1862	13 ³	1869	39	1875	64
1863	18	1870	47	1876	70
1864	20	1871	51	1877	76
1865	17	1872	37	1878	103
1866	24				

Any comparison of these numbers with the reputed population of the city in any other years but those in which a census was taken, is considered hazardous on account of the tendency to exaggerate the number of inhabitants, which is common to the growing cities of the United States, and appears in all the publications relating to them except the census itself. The only years of the series above shown in which a census was taken in San Francisco were 1860 and 1870, when the population was respectively 56,802 and 149,473.

The least objectionable means of determining the relation of the number of suicides in San Francisco to that in other cities is to compare both of them with the whole number of deaths in each place. Without burdening this work with

¹ Ended June 30.

² Estimated.

³ Estimated from returns of nine months. The returns for the years 1867, 1868, 1872, 1874, 1875, 1876, and 1877 are from the Health Board returns, the others from the coroner's. The latter's summary report for 1878 gives, on p. 124, the following numbers for each year commencing with 1863, viz., 17, 20, 16, 20, 28, 20, 43, 44, 44, 45, 37, 59, 60, 56, 75, and 103. Total reported in sixteen years, 687. Chinamen are not included in any of these numbers except where, very rarely, a Chinaman is specifically reported to have died from self-destruction. Inquests are not held upon the bodies of Chinamen dying from unknown causes.

details which would probably weary the reader, it is deemed sufficient to say that, determined in this way, suicides are more than twice as common in San Francisco as in New York, and more than three times as common as in Philadelphia. It is the present writer's belief, that as compared with population—could the latter be satisfactorily determined as to San Francisco—the result would appear still more unfavourable. It is also to be remembered that this result is only given with reference to the numbers of the reported, not the true numbers of suicides in San Francisco. Giving due weight to this consideration, it will probably be not far from correct to regard the proportion of suicides in San Francisco either to all deaths or to population as fully three times as great as in New York, where suicide is a much more common occurrence than elsewhere in the United States.

All inquiry into the probable causes of such an extraordinary preponderance of suicides is bound to be beset with obstacles. When the predisposing, nay, even the immediate, causes of self-destruction defy, as we know they commonly do, the scrutiny of a legal inquest, there would seem to be little hope of determining them from that more general sort of evidence which is to be found in other ways; and but for a personal knowledge of the habits of life common to several mining countries, the present writer would hesitate to indicate them. In his report for the fiscal year ended June 30, 1878, the coroner of San Francisco reports thirty-five cases as caused by pecuniary, and seven by unknown motives. Three of the former he directly traced to stock gambling. Intemperance, insanity, and unsound mind cover twenty-one more cases. All of these cases and many others attributed to various causes, may have been, and probably were due to gambling in the mines, or the absence from home and friends which forms another condition peculiar to mining countries. This probability is greatly strengthened by the causes of the suicides, covering a portion of the same period, which were reported by the daily press. During the calendar year ended December 31, 1877, the following suicides with

their supposed causes were reported in the "San Francisco Chronicle."

Assigned or supposed causes of suicide.	Males.	Females.	Total.
Losses in mining stocks and other pecuniary	20	2	22
Insanity, cause not stated	5	0	5
Intemperance, cause not stated	12	0	12
Incurable disease	7	0	7
Love	4	3	7
Ill treatment	0	2	2
Religion	1	0	1
Remorse for murder	1	0	1
Unknown or not stated	24	3	27
	74	10	84

Among the conditions that influence suicide there are none, except mine gambling and the separation from home and familiar faces, which is peculiar to mining communities, and especially those of recent growth, in which San Francisco does not enjoy advantages which should exempt it from this crime. The city is exceptionally healthy, it is purified by sea winds that blow every day; its foundations are laid in clean dry sand, it is hilly, it has a good drainage, and is washed by a vast bay on the one side and the ocean on the other. The climate is dry, temperate, and steady. Food of every description is plentiful and cheap; all the other necessities of life are to be obtained upon the same terms as in other cities throughout the United States; while labour is usually in demand and commands a higher price than elsewhere. Hence, in looking for the causes of this great and peculiar mortality, the inquirer is led at once to the subject of the mines.

Before the civil war the number of suicides committed annually in San Francisco was about thirty. During the war—and this period also agrees with the opening and development of the great Comstock mines—when great profits,

rising prices, and abundance of employment for the industrial classes preserved them from those temptations to self-destruction which find their origin in pecuniary difficulties, the annual average fell to seventeen. When the war closed and the Comstock mines came to be incorporated into stock companies, suicides resumed their former frequency, and during the four years ending with 1869 the annual average became again, as before, thirty.

The ensuing four years witnessed the opening of the great Crown Point and Belcher Bonanza, and the first series of gigantic stock speculations and jobberies which distinguish the annals of the coast. During this period the average annual number of suicides rose to forty-three. In 1874, while the Crown Point and Belcher Bonanza was still yielding at the rate of £3,600,000 a year, the Big Bonanza was struck in the consolidated Virginia and California mines, and this added some £1,000,000 to the year's product of the precious metals, and proportionately increased the pre-existing mining excitement and the practice of jobbery. From this time forward until 1877 the Big Bonanza continued to increase its product, to augment the predominant mania of the coast, and to afford additional support to the resources and devices of jobbers.

In the last-named year the fact was unexpectedly disclosed that this great ore body had passed its point of highest production. Then followed a tremendous collapse in all gold and silver mining shares, numerous bankruptcies, a fall in real estate, rents, commodities, and wages, popular tumults, and numerous misdemeanours and crimes; among the latter an unusual number of suicides. Taking together the five years ended June 30, 1878, the number of suicides reported to have been committed in San Francisco reached the unprecedented annual average of seventy-five.

It is difficult to believe that these occurrences were not connected. This conviction is strengthened, not only by the statistics of commitments for insanity hereinbefore given, but also by the statistics of death by violence, of crime,

immorality,¹ and disorder of every sort ; by the accounts of the savings banks, by the returns of bankruptcies, and by the prevalence of indigence and suffering among those classes of the community who did not profit by these speculations, or succumb to the blow which they inflicted on the losers.²

¹ The number of divorces decreed in San Francisco in 1876 was 253, in 1877 it was 243, and in 1878 it was 267.

² This chapter was read before the California Academy of Sciences, Dec. 3, 1878. During the debate that followed, it was suggested by one of the speakers that in the earlier years of the Stockton and Napa Asylums, they received a smaller proportion of the insane of the State than afterwards. This, if true, would modify the estimates herein given ; but the suggestion was not supported by evidence, and may not have been well-founded.

CHAPTER XXXIX.

POLICY OF CLOSING THE MINES.

Closure of the mines of various countries and the reasons for it—Sparta, Athens, and other Greek States—East Indies—Institutes of Buddha, of Zeno the Stoic, and of Plato—Policy of the Cordistæ—Closure of the Roman mines—The Toltecs and Aztecs—Examination of the reasons assigned and not assigned for this policy—Local character of the ancient stocks and supplies of metal, and the economical perturbations thereby occasioned—Local character of mining—Disturbances occasioned by conquests and plunder of the metals—Views of Von Humboldt—These evils not yet wholly eradicated—The Mercantile System—Physical devastation caused by mining—Influence of numerary systems—China—Special reasons in certain countries—Japan—Mediæval Spain—The moral influence of mining too local to have led to the closure of the mines in ancient times.

IT was the policy of many ancient and of some existing nations to close their mines of gold and silver, and forbid the production and use of these metals. A measure so important, and the reasons assigned for it, must certainly be worthy of examination.

The laws of Lycurgus, whose era is assigned to the ninth century before Christ, interdicted the working of the mines, and even forbade the importation of gold and silver into Greece. This was after coins of these metals had circulated in that country for many centuries; and when this currency was superseded by the iron numeraries (not coins, as is commonly supposed) of the great lawgiver.

Says Athenæus: "The Lacedæmonians being hindered by their national institutions from introducing silver or gold into Sparta," deposited what they came by with the Arcadians, who picked a quarrel with them, "with the express view of seizing on this deposit, without being called to account for it, by reason of the onmity now subsisting," and

"when Lysander brought gold publicly into the city (of Sparta), he was the cause of many evils to the State by so doing."¹

The crime of Gyllipus, and the decree offered upon its exposure, viz., "that no coin of gold or silver should be admitted into Sparta, but that they should use the money that had (formerly) long obtained," appears to prove that gold and silver coins had at this period again crept into circulation. The failure of the decree to pass seems to be conclusive on this point, for it shows that the iron numerary system was no longer practicable.

One of the institutes of Buddha (the *Sīla*) forbids all use of the precious metals, and regards such employment as an offence against morality.² The period of Sakyamuni must be assigned to the sixth century before Christ; although this ordinance, which probably extended over a great portion of the Asiatic continent, may belong to a later period.

Plato, in that body of laws designed for a model republic which enlisted the admiration of the ancient, as it has never failed to excite the interest of the modern, world, absolutely proscribes the use of the precious metals as money.³ This illustrious philosopher flourished at about the beginning of the fourth century before Christ.

Zeno, the stoic, whose era was a century later, proscribes their use conditionally.⁴

The use of gold was interdicted by the Cordistæ, a nation of Gaul, a remnant of that one which formed the army of Brennus II., when he entered upon his expedition against the temple of Delphi, B.C. 278. Says Athenæus, "The Cordistæ do not introduce it (gold) into their territories as (because it is) a thing on account of which they have suffered

¹ Athenæus, book vi. § 23, 24.

² The *Vinaya* is the discipline of the priests; one of its parts called *sīla* (to learn) regards the morality of laymen. The *Sramanas* (sense-tamers) are bound to observe 250 ordinances. Of these, ten are essential, and one of these is not to receive precious metals. "App. Encyc.," old ed. art. "Buddhism."

³ Laws, v. ch. 12.

⁴ Aristot. "Economics."

many calamities; but they do use silver, and for the sake of that, they commit the most enormous atrocities."¹

An ancient law of the Roman Senate, probably belonging to the period of the Commonwealth, forbade the working of gold and silver mines.² How long this remained in force we are not informed; but it was probably abrogated when silver money was introduced into Roman territory, about B.C. 300, and certainly disregarded when the legions under Scipio occupied and worked the silver mines of Spain, B.C. 206.

There are some evidences which point to the ancient use and subsequent interdiction of metallic money, and consequently to the closure of their mines by the Aztecs, or at least the more progressive race that preceded them, the Toltecs. When discovered by the Spaniards, the Aztecs used in some of their provinces tin money, in others they used gold-dust in quills, in others copper money; and recent explorations seem to indicate that they, or the Toltecs, prosecuted silver mining in a systematic manner in the province of Chihuahua.³

An ancient law of the Chinese empire, which, although it is not stated to have ever been abrogated, appears nevertheless to have fallen into disuse, forbids the opening of its gold and silver mines, for the reason, according to Sir R. Murchison, that it would conflict with a theory relative to maintaining the "balance of the circulating medium."⁴ Whether this reason is derived from Chinese sources or not I am unable to determine. Possibly Murchison follows Postlethwayt, who alleges that it was to keep down the price of labour; which was then but little over one penny a day. The Chinese reason, as given by Postlethwayt, appears, however, to be the true one. This is, that the people

¹ Athenæus, book vi. 23-26.

² Pliny, "Nat. Hist." Bohn's ed. book iii. chap. 24.

³ The evidences will be found in foot-notes appended to chapters i. and xi. of the present work.

⁴ "Encyclopædia Brit." ed. 1858, vol. xv. p. 472.

should not be forced into slavery.¹ Mr. William Newmarch, writing in 1857, and probably quoting from M. Otreschkoff ("De l'Or," &c., Paris, 1856), says that "the Chinese Government are described as imposing every possible impediment to the search for gold and silver."²

Previous to the arrival of Europeans in Japan, it appears to have been the policy of that country to exclude the precious metals from circulation as money, and to keep the mines wholly or partly closed.³ If this policy was observed, it may have been due to the reason alleged, viz., the fear of exhausting the supplies of substances which "could not be reproduced;" or to the apprehension that in the then feudal condition of the country, mining would lead to a form of slavery degrading to the people, advantageous to the daimios, and fatal to the empire.

The Araucanians of South America, after having been conquered by the Spaniards and enslaved in the mines, recovered their liberty in 1602 by force of arms, and have ever since remained free. They live secluded from the world, hating the name of Spaniards and forbidding the use of their language. "A foreigner now and then enters among these Indians, but he must beware lest he attempt to look for, and much less to work for, gold. The traditions of their having been made to work for gold still exist."⁴

Says Malte Brun: "Pera, a kingdom rich in tin, is governed by Mahomedan princes, who are withheld from working their mines by a superstitious fear of giving offence to the genii of the mountains." Pera or Perak, is one of States of the the Malayan Peninsula. This country, known to the ancient Greeks as the "Golden Chersonesus," was

¹ Postlethwayt's "Dic. Com." ed. 1766, article "China." It seems that the gold river washings were not stopped.

² Tooke's "Hist. Prices," vi. 763.

³ The evidence on this head will be found in chapter xvii. of the present work.

⁴ Letter of John P. Sewell, dated Valparaiso, Nov. 22, 1878, published in San Francisco "Mining Press," Feb. 8, 1879.

conquered from the natives by the Mahomedans in A.D. 1296. In 1511, while still under Mahomedan rule, and tributary to the Chinese empire, the principal city of the peninsula, Malacca, was treacherously and piratically seized by eight Portuguese, assisted by two hundred Malabar natives under Albuquerque and plundered of "a booty so enormous that the quinto or fifth of the King of Portugal amounted to 200,000 gold crusados, a sum equivalent to a million pounds sterling," exclusive of ships, naval stores, artillery, and other property.¹

From these circumstances it appears probable that the interdiction alluded to by Malte Brun was adopted after the piracies of the Portuguese had deprived the peninsula of its previous accumulations of gold and silver. What amount of the latter, if any, was obtained from native mines in Pera has not been ascertained by the author; but the production of gold must have been very considerable, and this was probably greatly increased under the cruel and despotic rule of the Portuguese. At the present time, the product of gold in the entire Malayan Peninsula does not exceed 20,000 ounces per annum.²

Postlethwayt in his "Commercial Dictionary," article "Gold," quoting from Le Père Jean Baptiste Labat's "*Nouvelle relation de L'Afrique occidentale*," vol. iv. pp. 54, 55, says that "About twenty leagues above Coinoura to the left of the river (the Falemo in Senegal?) there is a gold mine in the land of Tomane Niacalen which is very rich, and of a pure metal. It is very easy to work, and yet the negroes have left it, upon an idle superstition which prevails among them." The character of this superstition is not mentioned, but it may perhaps be conjectured from the story of Hatuey given in chapter viii. of the present work. It was doubtless the fear of cruelty and slavery which the negroes had every reason to expect from the hands of the white gold-hunters.

¹ "App. Encyc." art. "Malacca."

² "App. Encyc." art. "Malay."

In resorting to measures of this character, it would hardly be safe to assume that the reasons assigned even by the nations most concerned, were necessarily the true ones. The interests of powerful classes, the ignorance of the multitude, the jealousy of surrounding nations have all to be propitiated while taking so important a step as this; and these ends are not always to be subserved by an overt and candid policy. For example, it can hardly be supposed that the father, or even the apostles, of Buddhism really believed the use of gold and silver to be immoral. They evidently employed the authority of religion to interdict a practice which had become injurious, for reasons which they deemed impolitic to avow. What these reasons may have been we are now to inquire.

1. Probably the most powerful reason for interdicting the use of the precious metals in this or that country in ancient times was one that now holds good only in a qualified sense. This was the smallness of the accumulated stock in any one country, the uncertainty of future supplies, and the absence of that commercial intercourse between countries which in modern times places the accumulated stock, and the supplies of all countries within the possible reach of any one of them. For example, if, at the present time, gold becomes temporarily scarce in London, or silver in Calcutta, these cities have the whole world's stock and supplies to draw upon for more. All that is demanded in return is that they shall be able to furnish an acceptable equivalent in other commodities for the desired metal. Should the general supplies diminish, and the general stock fall off, the uneven shrinkage of prices, and the commercial disasters that would follow, would be shared in common, though not equally, by all the world.

But this was not the case in ancient times. Each country that used gold or silver money had its own separate stock, and its own sources of supply of these metals; and international commerce was so limited that there was little connection between this stock and supplies and those of sur-

rounding countries. Hence the discovery of a new placer, the failure of an important mine, or the accession or loss of money metal by the fortune or misfortune of war, would expose a country to the most violent fluctuations of prices, and, consequently, to the disruption of all pre-existing interests; in a word, to the suspension of the established social order.

This was the danger that menaced modern Russia when she had recourse to the use of platina for commodity coins. This metal was not used as money by other nations,¹ and the accumulated stock throughout the commercial world was quite small. The legal tender character given to it in Russia stimulated its production so greatly that the supplies, compared with the limited stock, caused it to fall rapidly in value; and after a few years of partial trial (for it never formed more than a small part of the Russian circulation) its use was abandoned.

Many of the ancient countries had no gold and silver mines of their own, or their mines were too unimportant to be relied upon for sufficient supplies of these metals to make good their wear, tear, and loss, or to keep pace with increasing population and commerce. The limited character of the international commerce of those times, and the constant outbreak of war, tended still farther to jeopardize the supplies and even the stocks of these metals; and to use them as money in any populous and progressive State must have been extremely perilous.

If it be supposed that the *Sila* of Buddhism was composed after Alexander's conquest of India, about B.C. 326, a very excellent reason might be assigned for its inhibition to use the precious metals. That conqueror having removed all the gold and silver contained in the cities which he plundered, and the country which he ravaged, these metals must have suddenly become so scarce in India as to be no longer fit for a measure of value. Their use must have been super-

¹ France used it for a short period during the reign of Louis Philippe.

seded by some other form of money, and they must have been decried by civil authority. The *Sila* may be the mere echo of this ordinance. If the *Sila* is of older date than the conquest of Alexander, the reason for its interdiction of the precious metals may have been any cause that contributed to render them dangerously scarce or plentiful, as the failure of mines, the discovery of new placers, &c.

The illustrious Von Humboldt has more than once alluded to this danger of ancient States. In one of his latest works devoted to this subject, he says: "The less general the commercial relations of the ancient world, the greater and more sudden must have been the changes necessarily undergone in the relative value of gold and silver" (and, therefore in the relation of value between either of these metals and other commodities). "Thus we find in Rome that, owing to the local accumulation of one of the precious metals, shortly after the conquest of Syracuse, the relation was $1:17\frac{1}{7}$, while under Julius Cæsar it fell for a time to as low a point as $1:8\frac{1}{4}$. The more inconsiderable the quantity of bullion already existing in a country, the more easily, by means of influx from without, may these extraordinary fluctuations be brought about. In the modern world the universality and rapidity of communication which restores the equilibrium, as well as the accumulated masses of gold and silver already existing, tend to render still more stable the relative value of metals."¹

In another place he mentions a remarkable depreciation which took place in the value of gold in Krasnojarsk (Siberian Russia), upon the opening and plunder of the graves of the conquered natives.² Instances of a similar character are mentioned in the present work.³

Until within the present century it was the policy of all the

¹ Essay on the "Fluctuations in the Supplies of Gold," Berlin, 1838, p. 6.

² Essay on "Fluctuations of Gold," p. 25; a quotation from Miller's "History of Siberia."

³ See the chapters on Yucatan and Honduras, Guatemala, Peru, &c.

European States to discourage the exportation and encourage the importation of gold and silver, on account of the serious dangers that menaced them from the irregular and uncertain supplies of these metals.¹ This policy, known as the Mercantile System, has incurred the thoughtless ridicule of writers who probably never took the trouble to learn that, if it has not now, it certainly did have until recently, a very strong reason for its foundation.

2. The physical devastation occasioned by mining for the precious metals must have furnished to all enlightened nations a strong motive to interdict their use as money. The mischief done to Lydia, Phrygia, and to the Hedjaz and other parts of Arabia and Asia Minor, once the leading mining countries of the world; to Greece, as attested by the vast heaps of scoriæ and ekvolades found near its silver mines; and to ancient Spain through placer and hydraulic mining;² the washing down of mountains, the bestrewal of arable valleys with stones and sand, the filling of rivers, the choking of harbours, the destruction of forests and consequent interruption of the rainfall in all these countries—these and many other damages, the evidences of which can be traced upon their surfaces or found in their annals, must have arrested the attention of thoughtful men in ancient times and strongly urged them to the adoption of the only remedy that promised to prove efficacious. This was the entire interdiction of gold and silver money. That this reason was the basis of the ancient Greek laws on the subject there can be little doubt; for most of the Greek States at one time or another resorted to a numenary currency in the place of coins. Among these were Sparta, Athens, Ionia, and Byzantium.³ When we know that the

¹ It was a capital offence to export the precious metals from Spain. Robertson's "Charles V."

² The process was precisely the same as now. Consult Pliny, "Nat. Hist." book iii. chap. 21; Diodorus Siculus, v. 27; Marsh's "Earth as Modified by Man," p. 632.

³ See "History of Money," by the writer.

monopolization of land by the patricians in Upper Italy was sufficient to arouse the Gracchi and lead to the civil wars which desolated Rome for a long period, it is difficult to suppose that the devastation caused by mining was unnoticed, and that no measures were taken to put an end to it.

3. The introduction of substitutes for metallic money in certain countries, and in certain periods of social progress, was quite as common in ancient times as it is to-day, and must have proved a strong inducement to other countries to interdict the use of gold and silver coins. Not only the Greek States, but also Carthage, Ancient, Mediæval, and Modern China, and Japan, and Rome itself—the latter during the whole period of the Commonwealth—established numerary currencies.¹ Though employed by these countries for other reasons, their employment proved so beneficial, as it undoubtedly did for a time, in sustaining and steadying the accustomed level of prices, that this must have led to their adoption in other countries. For example, Rome and Carthage had good reasons for employing numeraries, because at the time they did so they had no gold and silver mines of any importance within their dominions; and such little metal as they could obtain in commerce was needed for the prosecution of that coveted trade with India and China in which they were rivals.² Their exchanges and commercial relations were therefore always in jeopardy from the influence of suddenly scant or surplus supplies of the metals; and they merely consulted the commonest instinct of safety in discarding them as money.

Sparta and Athens had equally good reason for pursuing the same policy: mining had laid bare and devastated

¹ See "History of Money," by the writer.

² Pliny, "Nat. Hist." lib. xii. cap. 18, says that this trade took from Rome alone silver (?) to the amount of "*millies centena millia sester-tiûm*," per annum. This, it is true, was in the days of the Empire, but it was the first of those days, and the trade may have begun before Rome had abandoned her numerary system.

their territories ; it was therefore the part of wisdom to stop it. But the reasons which influenced Clazomenæ and Byzantium to follow a similar course are not so clear, unless it was the force of example, and the advantages which the leading contemporaneous States were perceived to have derived from it.

As to China, we are expressly informed by Sir R. Murchison that the reason for closing the mines was the desire not to impair the efficacy of the existing monetary system, a system which, more than once in the history of that country, has been of a purely numerary character.¹

4. In some countries there were special reasons for interdicting the use of the precious metals and closing the mines. Thus in Japan this policy, enforced in the seventeenth century, was doubtless due to an aversion to that slavery of the mines which the Portuguese had introduced into the country, and which tended to enrich the feudal lords to the prejudice of imperial power. The temporary closure of the mines of Spain in the sixteenth century² had for its object to compel experienced miners to emigrate to America, where the mines were far more important and prolific, and whence the Crown drew immense revenues from the imposition of the *Quinto* upon the product.

It is not known that the pernicious moral influences of gold and silver mining ever furnished a reason for closing the mines. They may, indeed, have been the true basis for the interdict in the *Sila* of Buddhism ; but such is not believed to have been the case. The moral influences of mining are necessarily confined to the vicinity of the mines and are lost in distance. Buddhism was a religion suitable not merely for a mining neighbourhood or a mining community, but for all men. This is proved by its popularity and wide diffusion throughout the Asiatic Continent, and in ancient times needs or questions of a merely local character were not apt to find relief or recognition in reli-

¹ "History of Money," by the writer.

² *Ibid.*

gious or continental codes. In these days of world-wide community of interests, however, the subject assumes a different aspect. As the sufferings of the American slave enlisted the profound interest of British philanthropists, and as the wretchedness and indigence of the British pauper have awakened transatlantic sympathy, so may the moral evils of mining localities elicit the attention of distant humanitarians and lead to such general measures of reform as may put an end to them; for so long as the world continues to employ metallic money are they bound to remain. It needs no telescopic humanity to perceive that the commercial and financial world to-day owes a measure of its prosperity to the crime and immorality which are the inseparable attendants of gold and silver mining.

CHAPTER XL.

CONCLUSION.

Review of the foregoing history—The principles it inculcates—The acquisition of the precious metals followed by consequences of cosmical importance—Their use as money formerly a matter of only national interest—At present it concerns all mankind—The social influences of mining practically of local character—Economical inductions—The future supplies of gold and silver—The end.

BEGINNING in a remote antiquity, and connected with peoples who perished long before any existing annals were written, the history of the precious metals has now been traced down to our very doors. The mind is therefore obliged to range over an immense vista, if it would deduce from this history the lessons it teaches.

Prominent among these is the one that the desire for the precious metals has furnished in all ages, an irresistible motive for the commission of cruelty, injustice, and aggression. It was one of the causes, in many instances the principal one, that led to the most desolating episodes in history: the Persian invasions, the sanguinary progress of Alexander, the Punic wars, many of the devastating raids of Marius, Sylla, Pompey, Paulus Æmilius, and Julius Cæsar; and some of the civil contentions of Rome.

In the Middle Ages it stimulated, if it did not indeed originate, that internecine strife in which all Europe was plunged for centuries, and which terminated only when it could direct its search for the coveted metals to the shores of a newly-found continent. It was the sole cause for those murderous expeditions of the Spanish American conquerors, which ended in the effacement of aboriginal American

civilization, and the slaughter, or slower and more cruel extermination, of some thirty millions of innocent people. It nerved the remorseless arms of Cortes, of Morales, of Pizarro, and carried its bloody traces even to distant Japan. It was the original cause of the African Slave trade ; of the decay of Carthage ; of the corruption of Rome, and of many of the worst crimes whose long catalogue stains the annals of later ages.

The consequences of these transactions have been of world-wide importance ; they have affected the destinies of races and influenced the progress of civilization.

The disposition of the precious metals has had scarcely less to do with the welfare of mankind than their acquisition. Their employment as money, and the various circumstances connected with this employment, which formerly were matters of merely national concern, have now assumed wider relations, and belong to the affairs of all mankind. It needs but little reflection to perceive that the preservation of a common measure of value in Europe and Asia, has led, since the opening of maritime commerce with the latter portion of the world, to the gradual approximation of its social relations towards the condition of those relations which is commonly to be found in Europe ; and contrariwise to the retardation of social progress in the Occident. The effect of a common money is to produce uniformity of prices, and this between Europe and Asia means a tendency to lower them in the West and raise them in the East. It is plain that these tendencies cannot be exercised without occasioning important changes in the social composition of both continents. They must necessarily, to some extent, promote Asiatic progress at the expense of European. Whilst they may not, indeed, we may be assured will not, hinder European progress, but only, and in some inappreciable measure retard it, they will certainly promote Asiatic progress ; and nothing but the substantially feudal condition of India, China, and Japan, which does not enable those countries to enforce the general employment of gold and

silver money within their dominions, prevents this promotion from becoming so rapid as to sensibly injure the Western world.

The use of a common money between the various nations of the Occident promotes, in a similar manner, the social advancement of the most backward and the social retardation of the most forward. It tends to emancipate the European labourer from the shackles with which ages of oppression have loaded him; whilst at the same time it tends to transfer these shackles to the American. For example, the price of wheat, and therefore the relation of wheat and of the cultivator's labour to all other commodities or services in republican America, is regulated by the price of wheat in quasi-feudal England or in wholly feudal Russia; and these relations are fixed in England and Russia by influences that may be traced back to distant ages. In a word, the use of a common money tends to equalize prices and wages, and therefore social relations and political conditions.¹

By a similar process the maintenance of the same measure of value from one age to another tends to equalize the social relations of the two ages, and if a reason is sought for the extraordinary fact that from the fall of Rome to the opening of America, a period of nearly twelve centuries, the population and social condition of Europe exhibited less progress or change of any kind than has been witnessed in the short period that has since elapsed, it will be found in the fact that during all this time the various countries of Europe employed substantially but one kind of money. Leaving the mediæval Italian republics out of view, the money of one age during this epoch was the money of all others, and it followed that the social relations of one became substantially that of all. This social condition or level has risen, but the

¹ "Exchange is political economy, it is society itself, for it is impossible to conceive of society as existing without exchange, or exchange without society." — Bastiat, "Harmonies of Political Economy," London, Murray, 1860, p. 70.

relations of its parts have remained unaltered. The agriculturist still stands at the bottom of the social ladder, the banker still at the top. Gold and silver have thus proved not only a common money to the world, they have become a common language and a universal law, which, while assisting progress, has compelled it to operate alike throughout all the world and to equally benefit the barbarian and the civilized.

Regarded from the same wide point of view, the physical devastation and the social mischiefs caused by mining for the precious metals, though they have ruined some of the fairest portions of the earth, and left their marks upon the composition of many races, are questions of merely local interest. Practically they belong now only to such countries as Brazil, Mexico, North-eastern Russia, the Pacific States of America and Australia, which possess gold and silver mines, mining populations, and valuable districts of countries that are being, or may be, injured by mining. The main question lies in the continued use of the precious metals for money, and there are many reasons for believing that, at least for some time yet to come, this use is a necessity which mankind can scarcely avoid, and before this necessity, whatever evils it entails, these countries and their populations must be content to bend.

The economical principles deduced from this history are :—

1st. That owing to the great influence of the accumulated stock on hand of the precious metals, and the fact that a large portion of this was obtained by conquest or slavery, and, therefore, at the time it entered into the exchanges it cost little or nothing, free mining has always been and for a long time yet will remain on the average an unprofitable industry, and that gold and silver cost more than they are worth.

2nd. That the supply of gold and silver is not like that of other, and particularly manufactured commodities, subject to the control of man, but is dependent on the vast stock

on hand of these metals and on the unforeseeable issue of mining discoveries and explorations from time to time; and that therefore gold and silver are not subject, in the same unconditioned manner as are other commodities, to the general law of supply and demand.

3rd. That the value of gold and silver is not determined by the cost of their production, but by the quantity in existence, or rather the total quantity of these metals and their substitutes (paper promises, and symbols, and paper and metallic numeraries) employed as money.

These principles are now offered to the examination of economical science. If the facts and considerations upon which they are based are strong enough to support them they will stand; if not, they must and will deserve to fall.

With regard to the probable future supplies of the precious metals, the author can speak from personal observation only of the mines of the Pacific Coast. These, however, are the most important in the world. This observation, supported by a careful inquiry into the conditions of mining, leads him to the conclusion that, whatever may be the merits and prospects of particular mines and districts, the total supplies of both metals, and particularly of gold, will continue to diminish. As to the mines of other countries, he has endeavoured to exercise as much care and impartiality in the acceptance, examination, and comparison of data bearing upon the subject as he could command, and the result is that, in respect of them, he has been forced to a similar conclusion. Whatever may be the interests or wishes of the world upon the subject, it seems but too evident that the future supplies of these metals will not only fail to keep pace with the growth of population and commerce, but that they will absolutely diminish.

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